

DISSERTATION

Venture Capital
Investments in China

FENG ZENG

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DISSERTATION

Venture Capital Investments in China

FENG ZENG

This document was submitted as a dissertation in March 2004 in partial fulfillment of the requirements of the doctoral degree in policy analysis at the Pardee RAND Graduate School. The faculty committee that supervised and approved the dissertation consisted of Charles Wolf, Jr. (Chair), C.R. Neu, and Hongbin Cai.



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PREFACE

The venture capital industry in the United States is widely acknowledged as a powerful enabler of entrepreneurship and innovation in the American economy. Unsurprisingly, China's venture capital industry is relatively inconspicuous, inchoate, limited in scale, and embedded in a very different cultural context from that of the United States.

Feng Zeng's doctoral dissertation is a pioneering exploration of the emerging venture capital industry in China. Using a theoretical framework derived from the principal-agent literature in economics and from venture capital studies in the U.S., he formulates numerous hypotheses relating to China's recent and prospective venture capital experience, testing these hypotheses against two original data sets developed through his field work in China and from other internet sources. The result is a unique study that should be of interest to practitioners, policymakers, and scholars concerned with investment, corporate governance, and economic growth in China.

Dr. Charles Wolf, Jr.

SUMMARY

Venture capital (VC) has been growing rapidly in developing countries since 1990, but little research has been done on VC in developing countries so far. This research contributes to the knowledge of VC in developing countries by studying VC investments in China. China is an attractive starting point to study VC in developing countries because China is the superstar of developing countries in attracting VC investments. Detailed research on VC in China will be of great interests to various VC practitioners and policy makers in developing countries.

This thesis provides a detailed description of the history of venture capital in China by using a unique data set of VC-backed firms collected by the author. It finds that venture capital experienced dramatic change in China in the 1990s. Major findings of this thesis are summarized as follows:

The Organization of International Venture Capital Funds in China

Most of the venture capital investments in China have been conducted by international venture capital funds. The dominance of international venture capital funds is mainly due to China's strict regulations against fund-raising in China. Most of the international venture capital funds were incorporated as joint venture funds with state-owned enterprises (SOEs) to economize on transactional costs in China in the early 1990s. By the end of the 1990s, as China's market-oriented reform deepened and the rule of law improved, international venture capital funds were much less likely to have SOE partners

Choices Between SOEs and Private Firms

One of the most dramatic changes in VC investments in China is the shift from investing in SOEs to investing in private firms. In the early 1990s, 90% of VC-backed firms were SOEs. In contrast, fewer than 10% of the VC-backed firms were SOEs in the late 1990s.

International venture capitalists were willing to compromise governance structure by investing in SOEs in the early 1990s because of several reasons related to China's institutional environment. In the early 1990s, SOEs enjoyed the most favorable access to

resources in China, including capital, human resource, raw materials and access to IPOs. In contrast, private firms had insecure property rights and were heavily discriminated against by the Chinese government in the early 1990s.

International venture capitalists became increasingly interested in private firms as China's market-oriented reforms provided greater room for private enterprises to grow. The rise of NASDAQ in the late 1990s provided an ideal place for China's VC-backed private firms to have IPOs. These two factors made private firms increasingly attractive to international venture capitalists by the end of 1990s.

Types of VC-Backed Industries

In the early 1990s, international venture capitalists were generally interested in low-tech industries. However, in the late 1990s, information technology (IT)-related firms accounted for about 90% of the VC-backed firms in the late 1990s. The percentage of investments in high-tech industries in China in the late 1990s has been remarkably high compared with VC investments in other countries. It is also inconsistent with the profile of fast-growing private firms in China. The rise of the NASDAQ and the Chinese government's policies to promote high-tech industries in China are likely the main reason behind the dramatic shift from focusing on low-tech to focusing on high-tech.

Stages of VC-Backed Firms

International venture capitalists were more interested in early-stage firms by the end of the 1990s. These VC-backed early-stage firms tended to concentrate on Internet-related industries, suggesting that the increased interest in early-stage firms is likely to be mainly driven by the NASDAQ.

Equity Stakes and Valuations

In the late 1990s, the average investment amount was slightly higher and the equity stake held by venture capitalists decreased, which suggests that the valuation of VC-backed firms had increased dramatically by the end of 1990s. This increase in valuation and risk-taking in the late 1990s is consistent with the booming NASDAQ, and the phenomenon of "money chasing deals" in VC investments in the United States.

Discussion and Conclusions

The Chinese government plays an important role in shaping VC investments in China. Unfortunately, most of China's current regulations have negative impacts on VC investments. A common theme of VC investments in China in the 1990s is the desire to evade Chinese government regulations. Of all the policy constraints on VC development in China, not being able to list in China's domestic stock exchanges is likely to be the most binding constraint.

This research provides an affirmative answer to the question of whether developing countries can develop and benefit from VC. Despite all the difficulties of conducting VC investments in China, these investments still experienced dramatic growth in the 1990s and have successfully generated some solid multi-billion dollar firms listed in the NASDAQ. China's experience shows that VC can play a prominent role in large developing countries.

The research finds that the information-agency approach has had limited success in explaining VC investments in China. The effects predicted by the information-agency approach are likely to be secondary compared with the effects of the Chinese government's IPO policies and private property policies. Because developing countries typically have cumbersome government regulations and insecure property rights, it is important to study those areas in particular to understand VC in developing countries.

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CHAPTER 1: INTRODUCTION

1.1. Significance of the Research

The amount of venture capital has been growing significantly in China in the 1990s. Total venture capital investments in China grew from virtually nothing in 1990 to \$858 million in 2000. Venture capital investments have produced some solid multi-billion-dollar firms, such as UT Starcom, Netease, and Sina.com. The most recent case of venture capital success in China is CTRIP, an e-travel firm. CTRIP was successfully listed on the NASDAQ in December 9th, 2003, and it holds a record as being the highest one-day gainer in New York for three years.¹ Venture capital is expected to grow fast in the future as China's economy continues its strong growth.

The fast growth of venture capital has attracted the attention of policy makers in China. Venture capital has found many ardent supporters in China's government, including the vice chairman of the People's National Congress, members of powerful ministries, and local government leaders. The enthusiasm of China's policy makers for venture capital is demonstrated by a government document, *Several Opinions on Establishing a Venture Investment Mechanism*, released in November 1999. Approved by the State Council and jointly issued by seven powerful ministries,² this document offers guidelines for venture capital regulation in China. The document regards venture capital as an important driving force for national economic progress. It claims that:

¹ http://biz.yahoo.com/rf/031209/leisure_ctrip_stocks_3.html.

² "Several Opinions on Establishing a Venture Investment Mechanism,," November 16th, 1999, issued jointly by the Ministry of Science and Technology, the State Development and Planning Commission, the

A healthy venture capital investment system is important to propel the establishment of a country's technology innovation system, promote national economy and comprehensive national capacity, and realize leapfrog development for China.³

Many policy makers have translated their enthusiasm into action. Intensive efforts are being made in venture capital legislation. Some local governments, such as those in Shenzhen and Guangzhou, have established tentative regulations that grant favorable conditions for venture capital investment.⁴ The Ministry of Foreign Trade and Economic Cooperation has also issued regulations to facilitate the entry of international venture capital firms.⁵ The Chinese government has invested more than \$16 billion in state-owned venture capital funds since 1998.

Unfortunately, despite the intense interests in venture capital in China, little research has been done on venture capital in China. The lack of research makes it difficult for policy makers and practitioners to make enlightened decisions in China. In fact, research on venture capital in developing countries has not emerged until very recently (Lerner and Schoar, 2002; Cummings and Fleming, 2002). Most of the existing research focuses on venture capital in developed countries. A study on venture capital in China is important to understand venture capital in developing countries because China is a superstar among developing countries in attracting venture capital investments: China's venture capital stock accounted for 67% and 52% of the total venture capital stock in the

State Economic and Trade Commission, the Ministry of Finance, the People's Bank of China, the General Bureau of Taxation and the China Securities Regulatory Commission.

³Article one, "Several Opinions on Establishing a Venture Investment Mechanism,"

⁴About Shenzhen, "Tapping the Venture Capital Market: A Legal Perspective," Chinaonline Archives, December 12, 2000, about Guangzhou, "Guangzhou Grants Favorable Treatment for Venture Capital Investment," <http://news.sina.com.cn/c/2001-08-23/337537.html>.

developing nations of Asia in 1995 and 2000 respectively.⁶ Although China is widely regarded as unique and China's experience may not be applied to other countries, the insights from studying venture capital in China will be useful for reevaluating our current knowledge about venture capital and providing new directions to explore for future research.

1.2. Research Questions

One big obstacle of studying venture capital in China is the lack of data. To overcome this obstacle, I collected two data sets on venture capital in China. The first data set contains 56 international venture capital funds in China collected from *Asian Venture Capital Journal's Annual Guide to Venture Capital in Asia*. The second data set contains 266 venture capital investments by international venture capital funds. This data set was collected from various sources, such as *Asian Venture Capital Journal (AVCJ)*, initial public offering (IPO) prospectuses, and the Internet. These two data sets are the first data sets used to study venture capital in China in academic research.

The research focuses on international venture capital funds because international venture capital funds dominate venture capital investments in China. International venture capital funds accounted for more than 95% of the venture capital funds raised in China before 1998 (see Table 4.1). Although the percentage decreased after 1998, international venture capital funds still represent the best practice of venture capital funds in China. All 18 successful IPOs of VC-backed firms in China in the past decade received

⁵ "Temporary Regulation on Establishing International Venture Capital Firms," The Ministry of Foreign Trade and Economic Cooperation, The Ministry of Science and Technology, and the National Bureau of Industry and Business Administration, August 8th, 2001

⁶ Author's calculation, based on information from *AVCJ*, 2001.

international venture capital funds. None of them received investments from China's domestic venture capital funds.

International venture capital funds dominate venture capital investments in China because China has strict regulation against fund-raising. Any fund-raising in China has to be approved by the People's Bank of China (Liu, 1999), and the People's Bank of China rarely approves public fund-raising. Private fund-raising organized by individuals or private firms without government approval is strictly prohibited. Due to this restriction, venture capital funds that conduct investments in China are either international venture capital funds, or funds founded by the Chinese governments or state-owned enterprises (SOEs) (White, Gao and Zhang, 2002). Compared with SOE venture capital funds, venture capitalists in international venture capital funds are generally better trained and have stronger incentives to pursue financial returns. International venture capital funds are the prime choice of entrepreneurs in China and they are the leader in China's venture capital market.

This research adds to our knowledge of venture capital in two ways. First, it provides a detailed description of the history of venture capital in China. This dissertation answers some important questions: What are China's regulatory frameworks for venture capital investments? Who invests venture capital in China? What kinds of firms receive venture capital investments? Answers to these questions are essential to understanding the driving forces behind China's venture capital investments and making enlightened decisions about those investments.

Second, the dissertation examines how well the information-agency approach can explain changes in China's venture capital investments. Existing venture capital literature

generally uses an information-agency approach to explain venture capital investments. It has been argued that venture capital is fraught with information and agency problems. Many venture capital mechanisms are designed to mitigate these problems: staged capital infusion (Sahlman, 1990; Gompers, 1995), use of convertible bonds (Gompers, 1997), the combining of convertible preferred securities and staged capital infusion (Cornelli and Yosha, 2003), and the separation of ownership and control rights (Gompers, 1997; Black and Gilson, 1998). This information-agency approach has been proven to be successful in explaining venture capital investments in developed countries. However, it is unclear how well it can explain venture capital in developing countries.

China provides an ideal setting to examine how well the information-agency approach can explain venture capital investments in developing countries. China's institutional environment has been improved greatly in the 1990s because of market-oriented reforms. The information-agency approach predicts that an improved institutional environment should reduce information asymmetry and agency costs (La Porta, López-de-Silanes, Shleifer, Vishny, 2000). Reduced information asymmetry and agency costs should, in turn, encourage venture capital investments in projects with high agency costs, such as high-tech firms or early-stage firms (Gompers and Lerner, 1996). The need to use alternative governance mechanisms, such as owning a large stake in the company, should decrease as a result (Shleifer and Vishny, 1997). By comparing venture capital investments in China in the early 1990s and the late 1990s, this research will be able to show how well an information-agency approach can explain the changes of venture capital investments in China.

This research finds that venture capital investments in China changed dramatically in the 1990s, and the Chinese government played an important role in those changes. China's strengthened property rights and increased economic freedom are likely the main reasons behind the change from investing in state-owned enterprises (SOEs) in the early 1990s to investing in private firms in the late 1990s. The Chinese government's regulations of IPOs and the rise of the NASDAQ are probably be the main driving forces behind the increased investments in high-tech firms and in early-stage firms and the decreased equity stake held by venture capitalists in the late 1990s. Of all the government policies that are influencing venture capital investments in China, not allowing VC-backed firms to be listed on China's domestic stock exchanges is likely to be the most binding constraint.

This research also finds that the information-agency approach has had less success in explaining venture capital in China. Venture capital investments in the early 1990s tended to focus on investing in SOEs despite the fact that these investments typically have weak governance structure. The Chinese government's regulations of IPOs is likely to play a more important role than the improved institutional environment in the increased investments in high-tech firms and early-stage firms and the decrease of the equity stake held by venture capitalists. Overall, this research suggests that to understand venture capital in developing countries, it is important to study property rights and government regulations in those countries because the former tend to be more insecure and the latter more intrusive.

1.3. Organization of the Thesis

The rest of the thesis is arranged as follows. Chapter 2 is a review of the venture capital literature. Chapter 3 discusses the data collected to study venture capital in China. Chapters 4, 5 and 6 discuss venture capital in China from 1991 to 1993, 1994 to 1997, and 1998 to 2001 respectively. Chapter 7 concludes with findings and policy implications.

CHAPTER 2: LITERATURE REVIEW

This chapter reviews the literature on venture capital to identify factors that may influence venture capital investments. It is worthwhile to define venture capital here to avoid confusion. The National Venture Capital Association in the United States defines venture capital as “money provided by professionals who invest alongside management in young, rapidly growing companies that have potential to develop into significant economic contributors.”⁷ This definition of venture capital is similar to other definitions provided by William Sahlman (1994) and Joseph Bartlett (1999). It differentiates venture capital from other forms of investments. First, venture capital is different from public equity investment. Venture capital normally focuses on small firms that have great growth potential. These firms usually are not mature enough to be traded in public equity markets. Compared to public equity investment, venture capital investment has poorer liquidity, more severe information asymmetry and higher investment risks.

Second, this definition also distinguishes venture capital investment from “angel capital.” Managers of angel capital use their personal money to invest. In contrast, venture capital is managed by investments professionals who raise money from other investors.

Finally, venture capital is different from non-venture private equity investments (including buyouts, restructure, and mezzanine funds) because it focuses on rapidly growing firms. Firms backed by venture capital usually have considerable growth potential. For these firms, the cash flow generated from operations is usually insufficient to finance growth and debt financing is usually not available to them. In contrast, non-

venture capital private equity funds target more mature firms that have stable cash flows and limited growth potential. Typically, buy-out financing is associated with high debt ratios.

It is important to note that although venture capital is often associated with investing in high-tech firms, venture capital itself does not target high-tech per se. The true target is a growing firm. Firms in traditional sectors that can develop new concepts or new products, such as Federal Express, are also targeted by venture capital firms. The close association between high-tech and venture capital in the United States can be attributed to the fact that high-tech firms tend to be firms that have high growth potential.

2.1. Venture Capital: An Agency Perspective

Most of the existing literature on venture capital generally understands venture capital from an agency perspective. There are severe information and incentive problems associated with venture capital because venture capital is focused on investing in young and unproven firms. Successful solutions to these two problems are critical to the success of venture capital financing. Solving these two problems is particularly challenging with venture capital because many of the mechanisms used by public corporations to solve information and incentive problems are not available to venture capital investors. For example, debt is a financing instrument that has minimal information problems (Myers and Majluf, 1984), and it is widely used to finance established corporations. However, debt financing is not available to entrepreneurial firms because no interest rate is high enough to compensate risk on the one hand and avoid adverse selection on the other (Stiglitz and Weiss, 1981). Entrepreneurial firms usually have fewer tangible assets and

⁷ <http://www.nvca.org/>.

low liquidation value. They are not expected to generate a positive cash flow soon. These factors make them bad candidates for debt financing (Williamson, 1988; Harris and Raviv, 1990; Shleifer and Vishny, 1992). Additionally, no liquid stock market is available for entrepreneurial firms to help investors evaluate their performance (Jensen and Murphy, 1990) and to generate financial returns. Valuation of entrepreneurial firms is thus much more difficult than valuation of public firms. It is also difficult for investors to "vote with their feet" or to rely on an active takeover market to improve governance (Jensen, 1988; Scharfstein, 1988; Stein, 1988). These differences necessitate different solutions to agency problems in venture capital investments.

2.1.1. Venture Capital Fund-Raising

In response to the challenges of financing entrepreneurial firms, venture capital firms arose as financial intermediaries between venture capital investors and entrepreneurs. By specializing in venture capital investment, these firms have the necessary skills to help venture capital investors solve governance problems in the entrepreneurial firms (Chan, 1983). They can also provide economies of scale and scope in managing venture capital investment.

The rise of venture capital firms created new agency problems because these firms are also agents. Venture capital investors need to solve governance problems before they can let venture capital firms help them manage their investments. Many scholars believe that the limited partnership is a powerful solution to agency problems in venture capital fund-raising. The venture capital limited partnership is the dominant organizational form for venture capital organizations in the United States. Independent

venture partnership accounted for 78% of the total venture pool in 1994 (Gompers and Lerner, 1999, p. 9). In a limited partnership, investors are partners who contribute the majority of the capital (normally 99%). They are not involved in the daily operation of the partnership in order to retain limited liability status and to receive favorable tax treatment⁸ Venture capitalists are general partners who are responsible for running the partnership. The limited partnership is normally designed to be self-liquidating. Most venture capital limited partnerships cease to exist after 10 years (Sahlman, 1990, p. 490).

Specifically, the following mechanisms have been identified as effective answers to agency problems:

2.1.1.1. Contract covenants

Agency problems can be very severe in limited partnership because limited partners cannot participate in the daily operation of the business. At the same time, since the limited partnership interest is highly illiquid, the market for corporate control is unavailable for venture capital investors. Under this situation, a well-designed contract is particularly important to reduce agency costs by limiting opportunistic behaviors.

Gompers and Lerner (1996) use the “costly contracting” theory to explain the determinants of contract covenants. According to this theory, investors need to balance the negotiation and enforcement costs against the benefits of restricting opportunistic behaviors. Only when the benefits of restricting opportunistic behaviors are higher than

⁸ Venture capital limited partnership can operate tax-free as mutual funds. In addition, the transfer of securities to individual limited partners won't have tax consequences until they are sold. These tax advantages can be achieved as long as the limited partnership satisfies four conditions:

- a finite term life,
- transfer of limited partnership interests is restricted,
- early withdrawal from the partnership is prohibited
- and limited partners can not participate the active management of the partnerships (Sahlman, 1990)

the costs of negotiation and enforcement should more restrictive covenants be included (Williamson 1985; Smith and Warner, 1979). Since the benefits of restricting opportunistic behaviors are likely to be high when expected agency costs are high, the costly contracting theory predicts that more-restrictive covenants should be included when expected agency costs are high. Gompers and Lerner identify the following variables as proxies for expected agency costs:

- *A focus on investing in early-stage firms.* Early-stage firms tend to have higher information asymmetry.
- *A focus on high-technology firms.* High-tech firms have higher uncertainty and higher information asymmetry because of their unproven technologies and unproven business models.
- *Fund size.* Venture capitalists have stronger incentives to engage in negotiating and monitoring when the fund size increases. The contract should have more covenants as the fund size increases.
- *Payment sensitivity to performance.* Payment that is more sensitive to performance should better align the interests of venture capitalists and entrepreneurs. The number of contract covenants should be reduced as the sensitivity of payment to performance increases.

Using a random sample of 140 partnership agreements from two venture capital investment gatekeepers and one investor, Gompers and Lerner test the hypotheses above. In general, the results are consistent with their predictions. Gompers and Lerner find that coefficients of firm size and payment sensitivity are significant and consistent in

predicting covenants relating to overall fund management and type of investment. These results prove that contract covenants can be used to reduce expected agency costs.

2.1.1.2. Self-liquidating mechanism

The venture capital limited partnership is different from many other organizational forms because it is designed to be self-liquidating. The limited life imposes a healthy discipline on general partners: They have to deliver results in a certain period of time. The limited term also forces general partners in limited partnerships to raise funds continuously (Fenn, Liang, and Prowse, 1995). Failure to satisfy previous clients will lead to floundering in fund-raising. The heavy burden of fund-raising can serve as a screening mechanism to deter incompetent venture capitalists from entering the market.

2.1.1.3. Performance-sensitive compensation

Sahlman (1990) finds that venture capitalists typically receive 2.5% of capital and 20% of profits as compensation. This compensation package is highly sensitive to venture capitalist performance. A successful venture capitalist who can generate 20% return for investors can expect to have \$1.2 million from shared profits and about \$350,000 from the 2.5% annual fee. The shared profit part of compensation is more than three times higher than the base pay part. As long as the compound return rate is positive, shared profits will always increase faster than base pay as performance improves. In contrast, compensation for CEOs in public corporations is relatively insensitive to performance (Jensen and Murphy, 1990). The performance-sensitive compensation for general partners can help align venture capitalists' interests with investors' interests. The

fact that most compensation comes from shared profit can also prevent less competent venture capitalists from entering the market.

2.1.1.4. Use of intermediate institutions

Another solution to the information asymmetry problem is to use a professional intermediate service. An important change in the 1980s was the rise of investment advisors, or “gatekeepers” (Gompers and Lerner, 1999, Chapter 1). These investment advisors help venture capital investors select venture capital organizations, negotiate contracts, and monitor the implementation. Their professional services bring venture capital investment expertise to investors, reduce information asymmetry, and help venture capital investors make better decisions.

2.1.2. Venture Capital Investment

After raising money from investors, venture capitalists need to invest in entrepreneurial firms. This time, venture capitalists are the principals and entrepreneurs are the agents. Effective solutions to agency problems are critical for successful investments. The following mechanisms are used by venture capitalists to mitigate agency problems when they invest:

2.1.2.1. Staged capital infusion

Staged capital infusion is one distinct feature of venture capital investment. Venture capitalists normally divide their investments into separate stages. Only enterprises that meet predetermined milestones can receive further financing. Sahlman

(1990) argues that the staged capital infusion is the most potent control mechanism available to venture capitalists. It serves as a “short leash” to prevent entrepreneurs from investing in failing projects (Gompers 1995). This credible threat of being abandoned is a powerful mechanism that ensures that investors’ interests are served.

Refinancing is normally the time when major evaluations and decisions are made. Gorman and Sahlman (1989) show that although venture capitalists make site visits and gather information constantly, they normally are not involved in the daily operation of the enterprises. Instead, major decisions are made at the end of each funding stage. As a consequence, the duration of the funding stage is an important proxy for the intensity of venture capitalist monitoring.

Gompers (1995) argues that venture capitalists weigh potential agency costs and monitor and control costs when determining the intensity of monitoring efforts. It is costly to monitor and control entrepreneurial firms. The higher the potential agency costs, the more efficient it is to supervise the enterprises intensively and the more likely that venture capitalists will shorten the funding duration. Agency theory predicts that the following firm characteristics are indicators for expected agency costs:

The nature of the firm’s assets

- Liquidation value of assets, measured by the portion of tangible assets the firm possesses (Williamson 1988). A smaller portion of tangible assets indicates higher expected agency costs.

- Asset specificity, measured by the intensity of research and development (R&D) (Williamson 1975; Shleifer and Vishny 1992). Less asset specificity decreases expected agency costs.
- Degree to which the firm's value is dependent upon growth potential, measured by the firm's market-to-book ratio (Myers 1977; Rajan and Zingales 1995). A higher market-to-book ratio indicates higher expected agency costs.

The history of the firm

Firms that have a longer history will be able to provide more information so that venture capitalists can better judge their prospects. Agency costs should be lower for these firms.

The development stage of the firm

Firms that are in the early stages of development, such as during the seed or start-up phase, provide greater uncertainty and less information for potential investors. Information asymmetry should be more severe for these enterprises. Expected agency costs should be reduced as firms move toward later stages.

Gompers (1995) uses a random sample of 794 venture capital backed firms from Jan 1961 to July 1992 from the Venture Economics database to test these hypotheses empirically. He uses a hazard model for financing duration and finds that all the firm characteristics mentioned above, except the stage of the firm, have the predicted effects on financing duration. These findings confirm the hypothesis that staged capital infusion is useful to control agency costs.

2.1.2.2. State Contingent Equity Stake

A second distinct feature of VC investment is the equity stake owned by entrepreneurs is dependent upon the financial performances of the firms Kaplan and Stromberg (2003). The state contingent clause minimizes the information-agency problems because venture capitalists have more cash flow rights when the firm performs badly. Bad entrepreneurs will be reluctant to have made such a clause with venture capitalists because this clause prevents them from exploiting their information advantages.

2.1.2.3. Convertible securities

A third distinct feature of venture capital investment is the use of convertible securities. Gompers (1997) argues that convertible equity is widely used because it offers an effective solution to governance problems in venture capital investment. The convertible equity allows entrepreneurs to have a substantial share of the benefits if the enterprise performs well. The preferred (debt) portion of the convertible equity can serve as a discipline mechanism when the enterprise performs poorly. This discipline mechanism can also deter incompetent entrepreneurs from entering the market. The equity is not converted into common stock unless venture capitalists receive a very clear signal that the enterprise is going to succeed.

2.1.2.4. Separation of ownership and control rights

A fourth distinct feature of venture capital investment is the separation of ownership and control rights. Control rights to an enterprise are normally assigned according to majority ownership. However, this allocation mechanism may not be

optimal in venture capital investment. Gompers (1997) points out that venture capitalists often face a dilemma. On the one hand, it is important to give the entrepreneur a substantial share of the enterprise to provide him with proper incentives. On the other hand, a substantial share of equity and insider status may give the entrepreneur plenty of room to expropriate from investors.

To solve this problem, venture capitalists normally assume control rights over the firm by contract covenants, even though they may not own a majority share of the firm. These control rights normally include:

- a majority of seats on the board
- super-majority requirement for major decisions
- mandatory redemption
- prohibition on asset sales
- restrictions on control transfer
- restrictions on expenditures
- restrictions on new securities.

Because of these stipulations, it is difficult for entrepreneurs to make a major move without the explicit agreement of the venture capitalists. Venture capitalists can fire entrepreneurs if the performance is not satisfactory.

These control rights are normally relinquished if venture capitalists receive a very clear signal that the enterprise is going to succeed, such as an IPO. In that case, entrepreneurs will regain control rights over their enterprises. The separation of ownership and control can thus provide an additional incentive for entrepreneurs to perform well. For entrepreneurs backed by venture capitalists, the success of the

enterprise brings not only monetary benefits, but also the private benefits of controlling the enterprise. Meanwhile, the separation of ownership and control can also serve as a screening mechanism. Good entrepreneurs will be more likely to accept a clause that means surrendering control rights temporarily because they are confident that they can get them back in the future. Less-confident entrepreneurs will be less likely to accept the separation of ownership and control rights.

If control rights are used to reduce agency costs, then the allocation of control rights to venture capitalists should be most likely to happen in firms that have the highest expected agency costs. Contract covenants are costly to negotiate and enforce. Venture capitalists add covenants only when the benefits of adding covenants exceed the costs of adding covenants (Williamson 1985; Smith and Warner, 1979). Gompers (1997) tests this hypothesis empirically by examining 50 venture capital contracts from the Aeneas Group, an affiliate of the Harvard Management Company. Dependent variables include the nature of the firm assets and the developmental stage of the firm. The results show that the coefficients for the early stage and the average industry ratio of market value of equity to book ratio are positive and significant in predicting the numbers of covenants. These results are remarkable given the small sample size and the incomplete data (using industry data to approximate individual firm data). The coefficient for board seat composition is not significant, suggesting that board seat composition does not complement or substitute for other control mechanisms.

2.1.2.5. Venture enterprise board composition

The board has an important role in supervising the enterprise. Agency theory predicts that the higher the expected agency costs, the more important board supervision is (Fama and Jensen 1983; Williamson 1983). Board supervision is normally measured by the percentage of outsiders on the board. Lerner (1995) tests this hypothesis in biotechnology venture capital investment by using a model suggested by Hermalin and Weisbach (1988). Hermalin and Weisbach suggest that a CEO is likely to be replaced when the organization is in crisis. The board should then monitor the enterprise more closely after the replacement of the CEO. To test the hypothesis, Lerner constructs a sample of 271 biotechnology firms, backed by venture capital from 1978 to 1989, from the Venture Economics database. These 271 biotechnology firms had a total of 653 financing rounds. He finds that the coefficient of CEO turnover is positive and significant in predicting the number of new board members who are venture capitalists. His finding strongly supports agency theory.

In the same paper, Lerner also examines the relationship between geographic proximity and the presence of venture capitalist board members by using the same data. Since monitoring is costly, geographic distance should be a factor in deciding the costs of monitoring an enterprise and should be related to the probability of serving on a board. Lerner hypothesizes that the closer a venture capitalist is to the enterprise, the more likely he or she should be to serve on the board. The probit regression strongly supports this hypothesis.

2.1.2.6. Investment syndication

Finally, the syndication of venture capital investment is a significant feature of venture capital investment. Syndication is common in venture capital investment. Lerner (1994) argues that an important rationale for venture investment syndication is that syndication can provide a valuable second opinion that helps to improve the quality of project selection. If this is the case, then venture capitalists should tend to choose experienced venture capitalists to syndicate investment in the early stages of the enterprise when information asymmetry is the greatest. Venture capitalists should be less selective in their syndicated partners as the enterprise progresses toward later stages. Lerner (1995) uses the same data to test the hypothesis. The regression supports the view that syndication is used as a device to improve the quality of project selection.

2.2. IPOs and Venture Capital Investments

Scholars also find that IPOs have an important impact on venture capital investments. Venture capital exit can take several forms: IPOs, acquisition, liquidation, and leveraged buy-outs. Although the IPO is only one of many ways for investors to exit venture capital investment, it has an important impact on the venture capital market because it is the most profitable way to exit.⁹ A study by *Venture Economics* (1988) shows that every \$1 invested in a firm that later goes to an IPO will generate \$1.95 in return.¹⁰ In comparison, every \$1 invested in a firm that is acquired later will generate only \$0.40 in return. There is no doubt that the IPO is the preferred way for investors to exit venture capital investment.

⁹ Liquidation normally indicates total failure. Leverage buy-out normally is not available to the new enterprises because they are short of cash.

¹⁰ I have not found the original text. The following text is cited from P. 23, *Venture Capital Cycle* by Gompers and Lerner.

In fact, entrepreneurs also hope that venture capital investors can exit through IPOs, IPOs return control of the firm to the entrepreneur. Black and Gilson (1998) argue that entrepreneurs generally gain a great deal of private utility from controlling their enterprises. This can be demonstrated by the fact that, despite the high failure rate of new enterprises, many people are still willing to leave secure jobs to start up new enterprises. Unfortunately, to get venture capital investment, entrepreneurs normally have to temporarily surrender control rights over their enterprise to venture capitalists (Gompers, 1997). These venture capitalist control rights are normally relinquished at the time of an IPO, and entrepreneurs are then able to regain enterprise control. This return of control constitutes a huge incentive for the entrepreneur to deliver financial results for investors. It also serves as a mechanism to screen out bad entrepreneurs. The incentive/screening mechanism generated by IPOs cannot be duplicated by other exit mechanisms. For example, if investors exit through acquisition, the entrepreneur will lose control. Thus, easy access to IPOs will strengthen the venture capital governance system.

Empirical evidence supports the view that IPOs have an important impact on venture capital market activities. Black and Gilson (1998) study the relationship between the number of venture capital-backed IPOs and new venture capital commitment in the United States. They find that the two are highly correlated, with perhaps a one-year lag in venture capital fund-raising following the change in the number of venture capital-backed IPOs. The same pattern between venture capital fund-raising and venture-backed IPOs is also observed by Gompers and Lerner (1999, Chapter 2).

Jeng and Wells (1998) provide further evidence that IPOs are important to venture capital investment. They conduct a cross-country analysis of IPOs and venture capital

investment. After controlling for labor market rigidities, financial reporting standards, the scale of private pension funds, and macroeconomic variables, they find that IPOs are the most important determinant of venture capital investment.

The number of venture-backed IPOs is closely related to general market conditions. Lerner (1994) studies the timing of biotechnology IPOs and finds that the number of IPOs tends to increase when the biotechnology equity index in the public market increases. Venture capitalists are desperate to rush their portfolio firms to the public market when the "IPO window" is open. Lerner's study further confirms the importance of the public security market to venture capital investment.

2.3. Law and Finance: Financing Under a Weak Institutional Environment

The current literature on venture capital generally assumes a strong institutional environment: secure property rights, mature market intermediate institutions, friendly government regulations, and an independent judicial system. However, these conditions are normally not satisfied in developing countries. Since little research has been done on venture capital in developing countries, this literature search turns to literature on law and finance to study venture capital in developing countries.

The literature on law and finance studies the impact of institutions on the pattern of external financing. Good institutions, defined as institutions conducive to economic growth, are institutions that can safeguard private property against government expropriation and private expropriation (Djankov et al., 2003). Government can expropriate private property directly by seizing it from private citizens under nationalization programs or through burdensome regulations that aim to exact profits

from private citizens (De Soto, 2000; Djankov et al., 2001). In Western countries, the problem of government expropriation is handled by a liberal democratic system (North, 1990). In developing countries, institutions to guard against government and private expropriation are highly underdeveloped. Private citizens face a considerable risk of government expropriation.

The presence of government and private expropriation has an important effect on the supply of entrepreneurial firms: The threat of government expropriation decreases the supply of entrepreneurship. Entrepreneurship is a difficult process. Even after considerable resources are spent, the chance of successfully launching a new business is quite small (Sahlman, Stevenson, Roberts and Bhidé, 1999). When facing a “grabbing hand” government, potential entrepreneurs are reluctant to start new businesses because they know that the government might seize their investment. Even if entrepreneurs start firms up, they are reluctant to pursue growth because growth may attract unwanted government attention.

Private expropriation means expropriation by other private citizens through fraudulent or violent means, such as theft, breach of contracts, and insider trading. One prominent form of private expropriation in financing is by means of agency costs: managers may expropriate from investors after investors trust their money to the managers. Hart (1995) argues that managers deliver returns to investors because they have to. Investors acquire various rights by making contracts with managers when they finance managers’ projects. Failure to follow these contracts will bring managers undesirable consequences, such as liquidation. Hart argues that investor power is the most critical issue in corporate governance.

Naturally, investors' power is determined heavily by a country's institutional environment: different countries' laws give investors different rights and different countries have different contract enforcement capabilities. If the investor power theory is correct, we should observe that the institutional environment of different countries influences the pattern of external financing.

La Porta et al. (1998) identify a series of key legal clauses for investor protection. They discover that some differences of law across countries can be traced to the differences in legal origins: common law, French, German and Scandinavian. These four different legal systems were transplanted to the world through colonization and emulation. Thus these legal systems can be exogenous to the pattern of external financing. La Porta et al. (1998) find that, overall, common law provides the best protection to investors while French law provides the least protection.

The differences in investor protection and law enforcement have profound consequences to the pattern of external financing. La Porta et al. (1999a) examine the pattern of ownership around the world. When insiders have more equity in the firms, their incentives should be more likely to be aligned with those of investors, and they are less likely to expropriate from investors. Thus when investor protection is weak, external investors should require insiders to hold more equity as a precommitment not to expropriate from external investors. Research on the biggest listed firms generally supports this hypothesis (La Porta et al., 1998; 1999a; Claessens, Djankov and Lang, 2000a).

The differences in investor protection and law enforcement also influence the depth and breadth of external financing. When a country has strong investor protection,

investors should be more confident that they can receive returns on their investments, and the prices of financing should decrease. The decreased prices of financing should encourage entrepreneurs and managers to use more external financing. La Porta et al. (1997) study the size of the stock market, the number of listed companies, the number of IPOs and the size of debt in 49 countries. They find that countries that have better investor protection do have deeper and broader financial markets.

Research also shows that better investor protection improves firm valuation. When a country has weak investor protection, investors need to take the probability of expropriation into account, and they are willing to invest only when the firm valuation is low enough to compensate the probability of expropriation. La Porta et al. (1999b) study a sample of firms in 27 wealth economies. They find that better investor protection is associated with higher Tobin's Q. In addition, high insider ownership is weakly associated with higher valuation. The link between ownership and valuation is more pronounced in countries with weaker investor protection. Claessens et al. (2000c) test the same hypothesis with a sample of firms in East Asia countries and confirm La Porta's finding.

Scholars also argue that some alternative governance structure may be used when the institutional environment is weak. Shleifer and Vishny (1997) argue that owning a large stake in the firm could be an alternative governance structure when investor protection is weak because large owners are more likely to have the resources to monitor managers and are more likely to have inside information.

2.4. Recent Research on Venture Capital in Developing Countries

Research on venture capital in developing countries has not emerged until very recently. One recent research is the research on 210 private equity transactions in developing world by Lerner and Schoar (2004). This research draws from the literature on law and finance and studies how contracting choices of private equity may be changed according to legal regimes in different countries. It finds that the use of convertible preferred securities is closely associated with the legal regimes of the countries: transactions in common law countries are more likely to be associated with greater investor protections and more frequent use of convertible preferred. In addition, firm valuation is generally higher in countries that have better rule of law and a common law tradition.

Another recent research is the research done by Cummings and Fleming (2003). This research studies the relationship between legal regimes and venture capital exit channels by studying 366 venture capital investments across 12 Asian countries. This research finds that investments in small and high-tech firms are more likely to happen in countries where investor protections are stronger. In addition, IPO and acquisition exits are more likely to happen in countries that have higher legality index. The findings in this research are broadly consistent with the research on law and finance.

2.5. Summary of the Literature Review

A common theme of venture capital literature and the law and finance literature is that they both use an agency perspective to study external financing. Current venture capital literature argues that the mechanisms of venture capital can be understood as solutions to agency problems. The literature on law and finance argues that the

institutional environment influences the mechanisms of solving agency problems, and different mechanisms of solving agency problems lead to different financing patterns. This thesis draws from these two strands of literature to study venture capital investments in China. China's weak institutional environment in the early 1990s should have made it difficult for investors to solve agency problem efficiently. As a consequence, venture capitalists should have been reluctant to invest in high agency cost projects. An information-agency approach predicts that venture capital investments would be more interested in high-tech industry and early-stage firms in the late 1990s.

Weak investor protection in the early 1990s may also have forced venture capitalists to seek alternative governance structures such as owning a large stake in the firm. The need for these alternative governance structures should decrease as China's institutional environment improves. Thus, we would expect the equity ownership by venture capitalists to decrease in the late 1990s.

Current literature on venture capital also suggests that the availability of IPOs is critical to venture capital development. This thesis studies China's IPO policies to understand how the change of IPO channel has influenced venture capital investments in China.

CHAPTER 3: DATA

One big obstacle of studying venture capital in China is that no good data set is available. To address this issue, I collected two data sets on China's venture capital. The first is a data set of fund-raising by international venture capital funds. The second is a data set of investments by international venture capital funds. This chapter discusses the two data sets in detail.

3.1. Data on Venture Capital Funds in China

The first data set contains data on venture capital funds in China. Venture capital funds in China can be defined in two ways: Broadly defined, they are any venture capital funds whose investment scope includes Mainland China. Narrowly defined, they are any international venture capital funds that are intended to focus on investing in Mainland China. This research uses the narrow definition because the organization of narrowly defined funds is more sensitive to changes in China's institutional environment. Funds that were raised to invest in other areas besides Mainland China, such as Asia-Pacific funds or Greater China region funds, are not included in the analysis because they have only limited exposure to China's institutional environment. In addition, there are no data on the percentage of investments in China for these funds.

A venture capital fund is defined as a fund that intends to invest more than 50% of its capital in unlisted firms. A pure venture capital fund invests exclusively in unlisted companies. Many venture capital funds in the United States are pure venture capital funds. The venture capital partnership agreements in the United States usually specify that

venture capitalists cannot invest in listed securities (Gompers and Lerner, 1999). However, venture capitalists in China are frequently allowed to invest in a mix of listed and unlisted securities. The option of investing in listed securities complicates the analysis of venture capital investment because the management of venture capital is fundamentally different from the management of listed securities. This dissertation uses 50% in unlisted investment as a threshold to define venture capital funds because a fund is considered to be sufficiently "venture capital" when the majority of its funding is committed to venture capital.

The data for venture capital funds in China are compiled mainly from *AVCJ's Guide to Venture Capital in Asia* (*AVCJ*, 1993; 1997; 2001) and various *AVCJ* issues. *AVCJ* has consistently collected data on venture capital in China since 1988. A list of China funds was first compiled from *AVCJ's* annual *Guide to Venture Capital in Asia*. The list provides some basic information, such as the name of the fund, the name of the venture capital firm that manages the fund, the year the fund was founded, and the amount of money raised. All funds founded between 1991 and 2000 are included. The initial list has 123 venture capital funds.

One problem with using *AVCJ* data is that *AVCJ* does not make a distinction between venture capital and buy-outs. Fortunately this problem does not seem to be an issue for studying venture capital in China. Venture capitalists generally agree that there is virtually no leveraged buy-out activity in China.¹¹ So this research can use *AVCJ* data without losing its focus on venture capital in China.

¹¹ "The Middle Kingdom Beckons," P. 17, *AVCJ*, June 2002; this point is also confirmed in the researcher's interviews.

The next step of the data compilation process was to determine whether a fund is an international venture capital fund. I used information in *AVCJ* to classify the funds. In most cases, whether a fund is international or domestic is straightforward. For example, a fund managed by Citigroup is an international fund and a fund managed by China's Everbright Group is a domestic fund. The identification process was aided by searching other sources, e.g., *Asiaweek*, *Asiamoney*, business school case studies (Gray and Gui, 1997, Sahlman and Green, 1995), and the homepages of funds and fund managers. If a venture capital China fund was publicly listed, efforts were made to search the fund's annual reports. All 123 funds were classified through this process. Among the 123 funds, 70 venture capital funds were classified as international venture capital funds.

The initial list of international venture capital funds included some Greater China funds and some China funds that invest primarily in listed securities. To exclude these two types of funds, every issue of *AVCJ* and other media sources was searched to confirm that the funds in the list meet the definitions. Any reported fund that (1) did not intend to invest primarily in Mainland China; or (2) planned to invest 50% or more in listed securities; or (3) was founded by foreign government and universities was deleted. The final data set contains 61 international venture capital China funds. The research findings are insensitive to the inclusions of the 9 funds deleted.

In this research, I am interested in the relationship between China's institutional environment and the propensity of international venture capital funds to form joint ventures with SOE partners. A joint venture is defined as an international venture capital firm that is owned by at least one domestic firm. For example, China Asset Management is a joint venture fund because it is owned jointly by Hong Kong's Standard Chartered,

James Chapel and China's Venturetech. The process of constructing variables is similar to the identification process for international venture capital funds. I first tried to determine whether a fund is a joint venture fund through various media sources and Internet search. If it cannot be determined from the media or Internet search whether a fund is a joint venture fund, I send e-mails and faxes to ask venture capital firms. Non-respondents are followed up twice by phone. Unfortunately, I am not able to categorize every fund for this variable. The construction process positively identifies 26 funds as joint ventures with local firms in China.

Four funds were found that had domestic partners as advisors but did not have domestic partners as fund managers. Fund advisors are different from joint venture partners in that they are compensated based on their ability to generate deals and they have no voting rights with regard to fund management. For example, Cathay Clemente relied on Stock Exchange Executive Council (SEEC) to generate investments candidates. In exchange, Cathay Clemente gave 2% of the management fee to support the operation of the China Securities Industry Institute, an institute established by the SEEC (*AVCJ*, November 1992). ING Beijing gave a consultancy fee of 0.1% per annum on the net asset value of the company to its advisor, and a fee for sourcing and monitoring investment projects calculated at the rate of 0.65% (ING Beijing Annual Report, 2000).

No domestic partner was found for 29 funds. It is possible that some of the 29 funds indeed have domestic partners but these partners are not known to the researcher. However, the chance that they have unreported domestic partners should be small. The reason is that if an international venture capital firm wants to form a joint venture with local partners, it should believe that good local partners exist, and it should use the

existence of these partners as a selling point to attract investors. As a consequence, international venture capital funds are unlikely to hide their joint venture partners from the media. The bottom line is that the 29 funds are at least a good proxy for funds that do not have domestic partners in China. The 4 funds that have SOE advisors and the 29 funds that have no partner are classified as non-joint venture funds.

The other two funds are reported to have local partners, but it is unclear whether the local partners are advisors or joint venture partners. The two funds were dropped in the following analysis. I conducted a sensitivity analysis by including the two funds in the analysis and assuming that (1) these two funds are both joint venture funds; (2) either one is joint venture fund; and (3) neither is joint venture fund. The final results are insensitive to the inclusion of the two funds.

3.2. Data on Venture Capital Investments

The second data set collected contains data on VC-backed firms in China. To be included in the data set, a firm had to be unlisted and receive investment from at least one international venture capital fund. An observation must also have complete information on the following variables: the name of the firm, the industry of the firm and the name of at least one venture capital backer. Firms in the sample had to satisfy at least one of the following three conditions: be located in China, have major operation and manufacturing facilities in China, or have China as their major markets, to ensure that the firms have sufficient exposure to China's institutional environment. Each observation represents a round of investment that may include multiple venture capital investors. A round of investment is the appropriate research unit because venture capitalists must make a

deliberate decision whether to invest or not in each round of investment. The fact that multiple investors may be involved in each round should not complicate the analysis of an information-agency approach since multiple venture capital investors are often simplified as a single investor when financial contracting theories are applied to venture capital investments (Kaplan and Stromberg, 2002; Hart, 2001).

The data on VC-backed firms were compiled from the following sources. The first source is *AVCJ*. *AVCJ* frequently reports information on investees in its Regional News section and Private Equity Investee Company Reports section. Ninety firms were collected from *AVCJ*. The second source is the homepages of international venture capital funds. Many venture capital funds list their portfolio firms in their homepages. I searched the homepage of every international venture capital fund listed by various issues of *AVCJ Annual Guides*, VCChina's list of "88 Active Venture Capitalists in China" and Zero2ipo's list of "Active Venture Capitalists in China in 2001"¹² in August and September 2002. The third source is listed funds' annual reports. At least eleven China venture capital funds were traded on various stock exchanges. These annual reports provide the best source for describing VC-backed firms. I obtained annual reports for four funds through the Internet.¹³ The fourth source is three Harvard Business School (HBS) cases about venture capital in China: Richina Partners (Sahlman and Green, 1995), ASIMCO (Gray and Gui, 1997) and Chengwei Ventures (Hardymon, Lerner, and Leamon, 2002). The fifth source is the Prospectuses and Annual Reports of listed VC-backed firms. I managed to get at least one annual report for each of the 18 VC-backed IPOs, and 12 prospectuses of the 18 VC-backed IPOs. The last source is other media

¹² VCChina and Zero2ipo are two consulting firms in China.

reports such as SINA Technology News and SINA Financial News. I searched the two websites in 2002 and added to the data set when appropriate venture capital investments were reported.

Through the six sources, I identified a total of 307 investments. After compiling the 307 investments, I tried to identify whether these investments were made to SOEs. A firm is classified as an SOE if the firm had an SOE shareholder before a venture capital investment and the SOE shareholder still remain as a firm shareholder after the investment. About one-third of the firms can be directly identified as SOEs or as private enterprises because their homepages, *AVCJ* reports, IPO Prospectuses, fund annual reports or case studies explicitly mention the nature of the firms or list the principal shareholders of the firms. For the remaining firms, I searched *AVCJ* and the Internet to find information regarding these firms' incorporations and venture capital investments. The development of the Internet search engines allowed me to find information for most of the firms. I inferred that a firm is private if a report explicitly mentions that several individual persons started the firm and does not mention that the firm receives investments from China's SOEs or the Chinese government. In the end, I was able to classify 271 firms, or 88% of the firms in the original sample.

This inference is only a proxy for the actual nature of the firm since it is possible that a firm received unreported investments from the Chinese government or SOEs before it obtained venture capital investment. To get an idea about the accuracy of the classification, I sent questionnaires to several venture capital firms to ask them the nature of the firms in their portfolios. The survey serves as two purposes. The first is to find the

¹³ These four funds are China Assets Management (CAM), China Merchant China Direct Investment (CMCDI), Shanghai International Shanghai Growth, and ING Beijing.

percentage of misclassifications. The second is to rely on venture capitalists to classify firms about which I had no information. The returned questionnaires indicated only one mistake out of the 40 classifications. I also sent a list of firm classifications to a venture capital scholar in Beijing and asked for his opinion. For the firms that he could recognize, the scholar agreed with my classification. The two positive responses show that the classifications are relatively accurate.

Table 3.1 summarizes the completeness of the data. It shows that 266 observations, or 86.63% of the total sample, have complete data on the four variables: location of the firm, nature of the firm, time of investment and industry of the firm. Unfortunately, only half of the observations have information on the amount of venture capital investment and the stake held by venture capitalists. The lack of information on these two variables should not be surprising since many venture capitalists guard valuation information carefully.

(Insert Table 3.1)

This research uses the 266 observations in the following analysis. To avoid the omitted observation bias, I compare the 266 observations with the deleted 41 observations. The observable pattern for the 41 omitted observations is similar to that of the 266 remaining observations: close to 60% of the firms are in high-tech industries and most of the firms are located in Beijing, Shanghai, and Guangdong.

This data collection method may introduce some selection bias that needs to be discussed. First of all, this research relies heavily on media report to collect data. Unreported investments are less likely to be included in the data set. It is possible that media are selective in reporting investments: large and successful investments are more

likely to be reported. As a consequence, this research may contain a disproportionately large percentage of large and successful investments.

Table 3.2 presents the distribution of the venture capital stake variable and the venture capital investment amount variable by time period. It shows that both variables are more likely to have missing values in the late 1990s than in the early 1990s.¹⁴ This shows that the “missing completely at random” assumption is likely to be violated. When this assumption is violated, a naïve estimation based on complete observations only will lead to biased estimates (Shafer, 1997).

(Insert Table 3.2)

It is also possible that the media may be selective in reporting investments. For example, it is possible that large investment is more likely to be reported in more detail and thus data on large investment is less likely to be missing. It is also possible that large investment is less likely to be reported because investors and entrepreneurs do not want to disclose investment amounts if they are large. If the probability of the variable’s missing is dependent on its value, the “missing at random” assumption is not satisfied, and multiple imputation cannot be used to generate correct estimate (Shafer, 1997).

This research uses a Heckman two-stage model to address the problem of missing data when comparing investments amounts and investment stake held by venture capitalists in the early 1990s and the late 1990s.¹⁵ The Heckit model used in this research assumes that the probability of having missing data and the investment amount follows a

¹⁴ The uneven distribution of the missing value across time can be explained by the data collection methodology. Data on investments in the early 1990s mostly came from professional private equity journals such as *AVCJ*, which tended to be more complete in reporting investment details. The sources for investments made in the late 1990s were more diversified. Some sources, such as the homepages of the venture-backed firms and venture capital funds, are unlikely to report the details of investments such as investment amounts and stakes held by venture capital firms.

¹⁵ This method was suggested by Josh Lerner.

bivariate distribution. At the first stage, a probit model is used to estimate the probability of having missing data. An OLS is used in the second stage where λ is added to address the bias due to missing data.

Since it is easier to collect information about firms invested in recently, it is possible that this data set may contain a disproportionately large share of investments made in the late 1990s and early 2000s. Figure 3.1 compares the 266 investments by year with *AVCJ*'s data on total venture capital investment in China and confirms that this bias exists. Both data sets describe two similar cycles of venture capital investments from 1991 to 2001, although the *AVCJ* data are more volatile. Given that *AVCJ* investment data include investments by both international venture capital firms and domestic firms, and firms in which domestic venture capital was invested accounted for a significant portion of the total venture capital investments in China in the late 1990s but not in the early 1990s (Liu and Hu, 2001; *AVCJ*, 2002), the data set used in this research is likely to have a disproportionately large percentage of firms with investment in the late 1990s. As a consequence, the analysis based on this data set has to control time periods.

(Insert Figure 3.1)

Table 3.3 presents the distribution of VC-backed SOEs. This data set contains 171 SOEs, 93 private firms, and 2 township and village enterprises (TVEs). This research divides VC-backed firms into two categories: private firms and non-private firms. TVEs are categorized with SOEs because they have the same governance structure as SOEs: neither TVEs nor SOEs are owned by private entrepreneurs. One possible bias of the distribution of VC-backed private firms is that VC-backed private firms may have been under-reported in the early 1990s. China's political atmosphere was still unfriendly to

private firms in the early 1990s. Venture capitalists who invested in private firms in China in the early 1990s might have wanted to keep a low profile of their investments in private firms and thus VC-backed private firms were less likely to be reported by the media. This bias is plausible, but conversations with venture capitalists and scholars in China show that it is unlikely to be the truth. It is generally agreed that international venture capitalists generally focused on investing in SOEs in the early 1990s.

(Insert Table 3.3)

Table 3.4 summarizes the industry distribution of VC-backed firms. To obtain a distribution of industry for VC-backed firms, I first classified each firm in the sample according to the Chinese Standard Industrial Classification (Chinese SIC) compiled by China's National Bureau of Statistics. In most cases, a two-digit code was used to identify the industry of a firm. Sometimes a more specific four-digit code was used because the two-digit Chinese SIC does not necessarily coincide with the definition of high-tech (defined as IT-related and biotechnology) and low-tech. For example, consumer electronics such as TV sets and refrigerators share the same two-digit Chinese SIC code with other more high-tech electrical equipment such as telecom equipment. Table 3.4 categorizes consumer electronics under consumer products rather than information technology (IT) related products. Based on the initial Chinese SIC code, all firms were classified into several categories to facilitate comparison: agriculture, information technology related, medical/biotechnology, industrial manufacturing, consumer products, transportation, utility, real estate and services.

(Insert Table 3.4)

Table 3.5 lists the names of the top 33 venture capital firms behind the 266 investments. The most active investor in the sample is the venture capital branch of International Digital Group (IDG), which had 53 investments. Intel Capital is a distant second with 21 investments, followed by 19 investments made by Softbank. The top 10 most active investors in the sample made 176 investments.

(Insert Table 3.5)

The distribution of venture capital firms in the sample is consistent with previous research on venture capital fund-raising in China. The most active investors after the 266 investments tend to be venture capital firms that had the most commitments to China. Nineteen out of the top 33 (58%) most active investors in the sample raised at least one China Fund. Table 4.6 lists the 39 most active international venture capital firms in China in the late 1990s, as compiled by VCChina. It shows that the highest ranked venture capital firms in VCChina's list also tended to be the most active venture capital firms in the research data set used in this dissertation.

(Insert Table 3.6)

The 266 investments were made to 237 firms. Table 3.7 lists the 21 firms that received more than one round of investment. Those 21 firms received a total of 50 rounds of investments. They tended to receive their first investments in the mid or late 1990s and tended to be in IT-related industries. Firms that received more than one round of investments accounted for only a small percentage of the total firms in the sample. The limited number of multiple-round investments can probably be explained by the short history of venture capital investments in China and the strategic shift from investing in SOEs to investing in private enterprises in the mid 1990s. It makes this data set

unattractive for studying staged capital infusion in China. More data are needed in the future to study the pattern of staged capital infusion in China.

(Insert Table 3.7)

Table 3.8 shows the geographical distribution of VC-backed firms in China. In this research, the location of the firm is defined as the center of the firm's operation.¹⁶ Table 3.8 shows that VC-backed firms concentrated geographically. The top three destinations, Beijing, Shanghai and Guangdong, accounted for more than two-thirds of the total VC-backed firms. This pattern is similar to the geographical distribution in the United States, where California, Massachusetts and New York account for the majority of venture capital investment.

(Insert Table 3.8)

In summary, despite some shortcomings, the data set of 266 investments should be sufficiently representative and accurate to study venture capital investments by international venture capital funds in China from 1991 to 2001. One concern is that IDGVC has 53 observations in the sample, which means that about 20% of the observations in the sample had investments from IDGVC. To avoid the excessive influence of IDGVC, I performed sensitivity analyses by excluding investments by IDGVC. The outcomes are similar to the outcomes for including investments by IDGVC.

The rest of the thesis will discuss venture capital in China based on the two data sets. Because venture capital investments in China are volatile, the 11 years under study were divided into three periods—1991 to 1993, 1994 to 1997 and 1998 to 2001—to smooth some year-to-year fluctuation. The three periods are separated based on the

important milestones in China's market reform history after 1991 (Qian, 2000). In the first period, 1991 to 1993, China announced commitments to market economy. The second period begins in 1994 because China called for establishing a rule-based market economy at the end of 1993. The third period begins in 1998 because the 15th CCP Congress was convened in late 1997 and provided more secure property rights for private enterprises. Sensitivity analysis shows that results of this thesis are insensitive to different separation schemes.

¹⁶ Under this definition, a firm's location is overseas if a firm has manufacturing facilities in China or has China as its major market but has its headquarter is in overseas. However, if a firm is a holder of a foreign franchise such as Starbucks, its operation center is classified as in China.

Distribution of Venture Capital Investments in China, 1991--2001

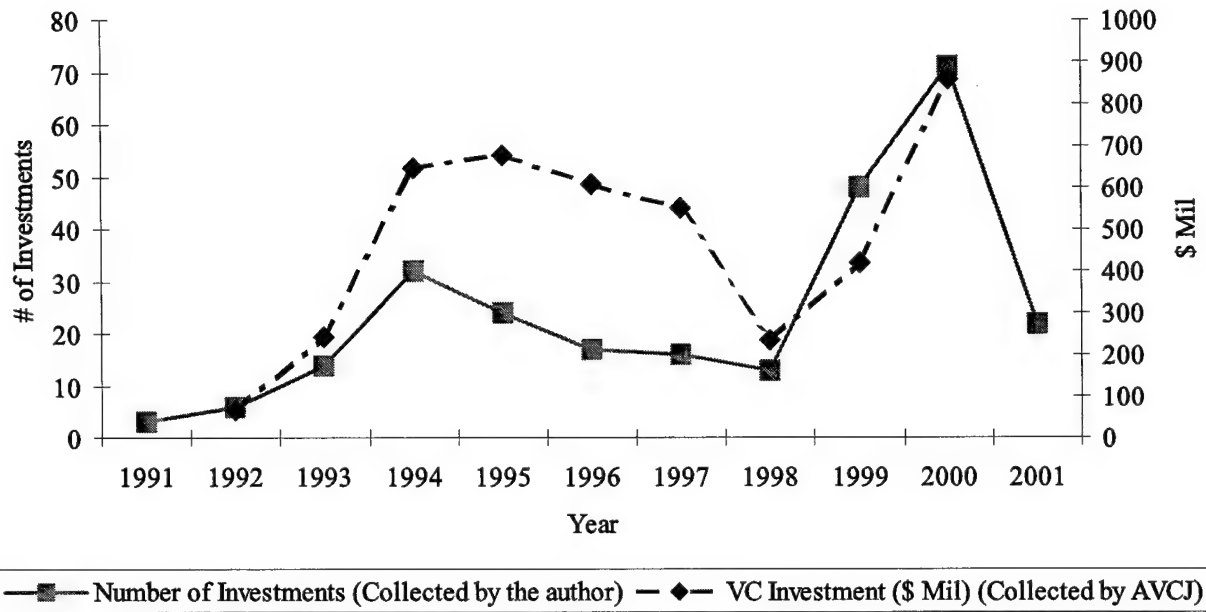


Figure 3.1: This figure compares the amount of VC investments in China compiled by *Asian Venture Capital Journal* (2002) with the number of venture capital investment in the data set used in the research.

Table 3.1: Completeness of the VC-backed Firms Data Set

This table summarizes the completeness of the VC-backed firm data used in the paper. I collected this data set from various secondary sources.

Key Variables	Total			Research Sample		
	Missing	Total	% of Missing	Missing	Total	% of Missing
Location of the Firm	10	307	3.26%	0	266	0.00%
Nature of the Firm	36	307	11.73%	0	266	0.00%
Time of the Investment	20	307	6.51%	0	266	0.00%
Industry of the Firm	0	307	0.00%	0	266	0.00%
Stake Held by VCs	138	307	44.95%	110	266	41.35%
Amount of Investment	171	307	55.70%	141	266	53.01%

Table 3.2: Distribution of VC Stake and VC Investments by Time Period and Private Firm

This table presents the distribution of VC investment amounts and investment stakes by time period and whether the firm was a private firm. The dollar amount in the table is constant 2000 dollar.

Panel A: VC Investment Amounts

Year	SOE					Private				
	Number of Obs	% of Missing	Mean (\$ Mil)	Median (\$ Mil)	Std	Number of Obs	% of Missing	Mean (\$ Mil)	Median (\$ Mil)	Std
1991--1993	19	9.52%	6.32	4.05	6.33	1	50.00%	6.67	6.67	-
1994--1997	50	10.71%	14.02	8.54	14.29	21	32.26%	9.73	4.35	15.12
1998--2001	10	37.50%	43.16	13.21	96.21	55	60.14%	35.37	10	143.31
Total	79	15.05%	15.85	7.55	36.4	77	54.97%	28	9	121.62

Panel B: % of VC Stakes

Year	SOE					Private				
	Number of Obs	% of Missing	Mean %	Median %	Std	Number of Obs	% of Missing	Mean %	Median %	Std
1991--1993	19	9.52%	27.48	28	8.02	2	0.00%	50.7	50.7	22.2
1994--1997	53	5.36%	37.69	35	18.63	21	32.26%	20.72	19.78	12.75
1998--2001	6	62.50%	8.09	6.6	7.82	24	82.61%	26	20.7	18.37
Total	78	16.13%	33.93	30	18.1	46	72.51%	24.69	20	16.53

Table 3.3: Distribution of VC-backed SOEs and Private Firms

This table contains data on 266 VC-backed portfolio firms in China from 1991 to 2001. The nature of the firm refers to whether a VC-backed firm is an SOE or private enterprise. The nature of the firm was inferred mainly through media reports, firms' homepages and IPO prospectuses. TVE in this table means firms controlled by China's Township and Village governments.

Year	Nature of the Firm						Total
	SOE		Private		TVE		Freq
	Freq	%	Freq	%	Freq	%	
1991	3	100.00%	0	0.00%	0	0.00%	3
1992	6	100.00%	0	0.00%	0	0.00%	6
1993	12	85.71%	2	14.29%	0	0.00%	14
1994	26	81.25%	6	18.75%	0	0.00%	32
1995	18	75.00%	5	20.83%	1	4.17%	24
1996	8	47.06%	9	52.94%	0	0.00%	17
1997	4	25.00%	11	68.75%	1	6.25%	16
1998	3	23.08%	10	76.92%	0	0.00%	13
1999	5	10.42%	43	89.58%	0	0.00%	48
2000	7	9.86%	64	90.14%	0	0.00%	71
2001	1	4.55%	21	95.45%	0	0.00%	22
1991--1993	21	91.30%	2	8.70%	0	0.00%	23
1994--1997	56	62.92%	31	34.83%	2	2.25%	89
1998--2001	16	10.39%	138	89.61%	0	0.00%	154
Total	93	34.96%	171	64.29%	2	0.75%	266

Table 3.4: Industry Distribution of VC-backed Firms

This table summarizes the industry distribution of the 266 VC-backed firms in China. Each investment in this table is first classified according to Chinese Standard Industrial Classification code. Then these investments are grouped into the following categories to facilitate comparison.

Industry	1991--1993		1994--1997		1998--2001		Total	
	Freq	%	Freq	%	Freq	%	Freq	%
Agriculture	0	0.00%	1	1.12%	0	0.00%	1	0.38%
Information Technology	3	13.04%	15	16.85%	133	86.36%	151	56.77%
Biotechnology	1	4.35%	4	4.49%	3	1.95%	8	3.01%
Industrial Manufacturing	7	30.43%	35	39.33%	3	1.95%	45	16.92%
Consumer Products	11	47.83%	17	19.10%	3	1.95%	31	11.65%
Transportation	1	4.35%	7	7.87%	0	0.00%	8	3.01%
Utility	0	0.00%	3	3.37%	0	0.00%	3	1.13%
Real Estate	0	0.00%	4	4.49%	0	0.00%	4	1.50%
Services	0	0.00%	3	3.37%	12	7.79%	15	5.64%
Total	23	100.00%	89	100.00%	154	100.00%	266	100.00%

Table 3.5: Top 33 Venture Capital Firms of the Sample

This table lists the top 33 venture capital firms that invested in the 266 VC-backed firms. All 33 venture capital firms made at least 3 investments in the sample.

VC's Name	Number of Investments in the Sample	Number of Investments in the Sample, 1998--2001
IDGVC	53	49
Intel Capital	21	21
Softbank	19	16
ASIMCO	17	0
China Asset Management (CAM)	14	2
Walden International	12	6
Shanghai International Shanghai Growth	12	2
Goldman Sachs	11	9
China Merchant China Direct Investment (CMCDI)	10	3
China Investment & Development Fund (CIDF)	10	0
Warburg Pincus	8	5
Chengwei	7	7
WI Harper	7	6
ChinaVest	7	3
Vertex Management	6	6
ING Beijing	6	1
Cathay Clemente	6	0
China Investment Corp	6	0
Acer Capital	5	5
Morningside SII Ventures	5	5
SCM	5	0
SHK	5	0
H&Q Asia	4	4
Citicorp	4	3
GIC	4	3
Richina Partners	4	1
AsiaTech	3	3
Carlyle Group	3	3
Dragon Tech	3	3
News Group	3	3
Orchid Asia	3	3
SuneVision	3	3
Fidelity	3	2

Table 3.6: VCChina's 39 Most Active International Venture Capital firms in China and Their Investments in the Sample

This Table lists the 39 most active international venture capitalists in China compiled by VCChina (Wang, 2001), and the number of investments of the 39 firms in the sample. The column "Investment in the Sample" indicates the total number of investments by the 39 firms in the sample. The column "Investment in the Sample, 1998--2001" indicates the number of investments by the 39 firms in the sample from 1998 to 2001. The latter column is added because VCChina determined the list mainly by studying venture capital activities in the late 1990s.

VCChina Rank	Name	Number of Investments in the Sample	Number of Investments in the Sample, 1998--2001
1	IDG VENTURE CAPITAL	53	49
2	Softbank	19	16
3	Goldman Sachs	11	9
4	Walden International	12	6
5	H&Q Asia	4	4
6	Intel Capital	21	21
7	News Group	3	3
8	WI Harpers	7	6
9	Transpac	1	1
10	ChinaVest	7	3
11	Baring Private Equity	7	2
12	Vertex	6	6
13	Morningside Venture	5	5
14	Citicorp	4	3
15	Carlyle Group	3	3
16	Orchid Asia	3	3
17	ASIMCO	17	0
18	Asia Cyber Republic Limited	0	0
19	Asia Tech	3	3
20	Samsung VENTURE CAPITAL	0	0
21	Gaoyang Venture	1	1
22	Kandip Venture Investment	0	0
23	CMG-Mahon	6	0
24	Hua-Chai	0	0
25	Dragon-tech	3	3
26	Golden Spring	0	0
27	Whitney	2	2
28	Pearl Oriental Cyber	1	1
29	698 Investments	0	0
30	Merrill Lynch	2	2
31	Acer Capital	5	5
32	Draper Fisher Jurvetson	2	2
33	Warburg Pincus	8	5
34	Jardine Fleming	1	1
35	SK Group	1	1

36	SuneVision	3	3
37	UBS Warburg	0	0
38	Global Internet Ventures	0	0
39	Cyber City Capital	0	0
Sum		221	175
Average		5.8	4.6

Table 3.7: VC-backed firms that received more than one round of investment
This table summarizes 21 VC-backed firms that received more than one round of venture capital investment. Data in this table came from the 266 VC-backed firms collected by the author.

Firm	Rounds of Investments	Year of the first round	Year of the last round	Nature of the firms	IPO or not
8848.net	2	1999	1999	Private	No
Asiainfo	3	1995	1999	Private	Yes
Eachnet.com	2	1999	2000	Private	No
GW Com	3	1997	2000	Private	No
Linkair	2	2000	2000	Private	No
Mediation	3	1996	2001	Private	Yes
MeetChina.com	3	1998	2000	Private	No
Netcom	2	1999	2000	SOE	No
Netease.com	2	1999	2000	Private	Yes
Newtone	2	1999	2001	Private	No
Qufu Sankong Brewery	2	1993	1994	SOE	No
Shenzhen Kingdee Software	2	1998	1999	Private	Yes
Shenzhen Mindray Medical	2	1997	2000	Private	No
Sina.com	3	1997	2000	Private	Yes
SMIC	2	2001	2001	Private	No
Sohu.com	3	1998	2000	Private	Yes
Stockstar.com	2	1999	2000	Private	No
Supersoft	2	1997	1999	SOE	No
Tigerpack	2	1996	1999	Private	No
UT Starcom	4	1995	1999	Private	Yes
Yabuy.com	2	1999	2000	Private	No
Total	50				

Table 3.8: Distribution of First Round vs. Non First Round Investments

This table presents the distribution of first round vs. non first round investments for the 266 investments. If a VC-backed firm contains only one round of investment in the sample, its investment is categorized as first round investment.

Time Period	SOE			Private		
	Total Number of Obs	First Round Venture Capital Investment	% of First Round Venture Capital Investments	Total Number of Obs	First Round Venture Capital Investment	% of First Round Venture Capital Investments
1991--1993	21	21	100.00%	2	2	100.00%
1994--1997	58	57	98.28%	31	30	96.77%
1998--2001	16	14	87.50%	138	115	83.33%
Total	95	92	96.84%	171	147	85.96%

Table 3.9: Geographical Distribution of VC-backed Firms in China, 1991--2001

This table contains the geographical distribution of 266 VC-backed firms collected by the author. A detailed description of the data collection process is provided in the paper. The location of the firm means the headquarter location of the firm.

Provinces	Total		1991--1993		1994--1997		1998--2001	
	Freq	%	Freq	%	Freq	%	Freq	%
Beijing	86	32.33%	0	0.00%	18	20.22%	68	44.16%
Shanghai	45	16.92%	4	17.39%	11	12.36%	30	19.48%
Guangdong	47	17.67%	3	13.04%	14	15.73%	30	19.48%
Zhejiang	13	4.89%	5	21.74%	4	4.49%	4	2.60%
Jiangsu	10	3.76%	3	13.04%	5	5.62%	2	1.30%
Shandong	11	4.14%	3	13.04%	8	8.99%	0	0.00%
Other Mainland Provinces	34	12.78%	3	13.04%	18	20.22%	6	3.90%
Overseas								
Hong Kong	13	4.89%	1	4.35%	5	5.62%	8	5.19%
Taiwan	3	1.13%	1	4.35%	1	1.12%	1	0.65%
California	10	1.50%	0	0.00%	5	5.62%	5	3.25%
Total	266	100.00%	23	100.00%	89	100.00%	154	100.00%

CHAPTER 4: 1991 TO 1993:

THE FIRST WAVE OF VENTURE CAPITAL INVESTMENTS

4.1. Background

Venture capital is a relatively new phenomenon in China. Up until 1980s, there was virtually no venture capital investment in China. The first wave of venture capital investment in China started in 1991. *AVCJ* data show that \$16 million was raised for venture capital investments in 1991. In 1992, the total funds raised jumped to \$583 million, a thirty-fold increase compared with the \$16 million in 1991. The first wave reached its peak in 1995, with \$678 million in investment (*AVCJ*, 2001).

The first wave of venture capital investments was brought by international venture capitalists. Table 4.1 shows that international venture capital firms accounted for more than 95% of the total fund raised in the early and mid 1990s. The absolute dominance of international venture capital funds in China in the early and mid 1990s was mainly due to China's strict regulations against fund-raising and the general lack of awareness of venture capital in China in the early 1990s. Private fund-raising by individuals or private firms without government approval is strictly prohibited in China. This strict regulation essentially removes the possibility for venture capitalists to raise funds within China. It means that only international venture capital funds and SOE venture capital funds can operate. International venture capital funds can bypass the regulation because they are incorporated and they raise funds outside of China. SOE funds rely on government appropriation as funding sources and do not have this fund-

raising problem either. In the early 1990s, few SOE funds were formed because few people in China knew what venture capital was. International venture capital funds brought the concept of venture capital to China and became the dominant player in China's venture capital market.

(Insert Table 4.1)

The first wave of venture capital investment was triggered by the deepening of reform in China. China's market-oriented reform, which started in 1978, encountered enormous political pressure after the bloody 1989 repression. However, despite the ideological backlash, many market-oriented reforms were carried out quietly. In December 1990, China opened its first computer-linked securities trading system, the Securities Trading Automatic Quotation System (STAQ). Shanghai Stock Exchange and Shenzhen Stock Exchange were officially opened in December 1990 and April 1991, respectively. B Shares were also established in 1991 so that foreigners could own China's listed securities. These reforms laid a solid foundation for China's financial market boom in the 1990s.

The ideological backlash against the market economy after 1989 was formally broken by Deng Xiaoping in early 1992 when he made his famous southern tour. Deng argued that a market economy was just a tool to improve national welfare and that ideology should not be the major criterion in evaluating a policy. His idea was endorsed at the end of 1992 during the 14th Congress of the Chinese Communist Party (CCP), which called for the establishment of a "socialist market economy."

Deng's endorsement of a market economy spurred a new wave of reforms.¹⁷ Almost immediately after the official endorsement of a market economy, various government agencies began to liberalize prices. Since 1993, the majority of resources has been allocated via market prices rather than by a central plan (Naughton, 1994, Qian, 1999). At the same time, measures were taken to reform SOEs. China's policy makers called for the establishment of a "modern enterprise system," SOEs were granted more decision-making power and were allowed to be listed in overseas and domestic stock markets to raise money. China also stepped up the process of opening its economy. Authority to approve foreign investment was decentralized to many local governments to make it easier for foreign investors to invest in China. Various tax exemption and tax reduction plans were granted to foreign investors. These reform measures stimulated China's economy enormously, and China's GDP grew at double digits from 1991 to 1994.

The reforms and the robust economic growth ignited the imaginations of international investors. Not so long ago, in 1991, the dominant attitude was "life is too short to endure the hassles of China."¹⁸ All of a sudden, China became hot. International investors poured money into the country at an unprecedented rate: Foreign direct investment grew at triple digits in both 1992 and 1993. International investors were particularly interested in China's nascent stock markets. By September 1992, 26 China investment funds had been launched to invest in China's B Share stock market, with a target amount of \$1.05 billion in total. In contrast, the total B share market capitalization

¹⁷ For a detailed discussion of China's reform after 1992, refer to Naughton, 1994 and Qian, 1999

¹⁸ *AVCJ*, May 1992, "The China Pendulum Swings."

in Shanghai and Shenzhen was just \$1 billion.¹⁹ Many B Share stocks were traded at prices that were more than 50 times the value of earnings.

International investors were also excited about China's firms being listed on overseas stock exchanges. In October 1992, Brilliance Automotive, an SOE, became the first Chinese firm to be listed on the New York Stock Exchange. Its share price had appreciated 30% three months after its IPO. In February 1993, Denway Investment, a car manufacturer that is a joint venture between an SOE and France's Peugeot, had an IPO in Hong Kong. The firm's IPO stocks were oversubscribed by 657 times: \$31 billion was submitted to chase the \$52-million offering. In 1993, nine SOEs and joint venture enterprises (JVEs) were listed in Hong Kong. The nine IPOs sought to raise \$1.21 billion in total capital, and they attracted applications worth about \$100 billion (Studwell, 2002).

Spurred by this enormous excitement, international venture capitalists began to invest in China. Although international venture capitalists generally knew little about investing in China, they were optimistic that they could earn decent returns by investing in a market with 1.2 billion people and double-digit growth rate. A venture capitalist says, "Asia has such growth that you can put toilet seats in China and earn a good return".²⁰

Since China did not allow fund-raising in China and did not allow limited partnerships, any international venture capitalist who wanted to invest in China had to incorporate overseas and raise money overseas. As with venture capitalists in the United States, venture capitalists in other countries also mainly raised funds from institutional investors, such as wealthy families, pension funds, banks, insurance corporations and industrial corporations. For example, investors in CAM (China Assets Management)

¹⁹ *AVCJ*, Nov. 1992, P. 23

²⁰ "Banks and Venture Capital in Asia," Jan 1995, *AVCJ*.

included Standard Charter Banks, Abbey Life Insurance and several Dutch pension funds. The Rainwater Family, Ziff Family and Spangler Family all invested in Richina Capital Partners. .

Intrigued by the enormous growth in China, international institutional investors responded to the fund-raising calls enthusiastically. Darla Moore, a manager of Richard Rainwater, explained the decision to invest in Richina:

“...we think China will be the next Japan with an extra zero on it. This is an investment for the next generation. China has the potential to be the largest economy in the world... When I first started reading his (Richard Yan) memos from China my pulse would start to rise and my palms got sweaty, I thought I was reading a script from Raiders of the Lost Ark.”
(Sahlman and Green, 1995)

One of the most telling stories of investors' enthusiasm in China was AMSICO, a venture capital firm that focused on investing in automobile-related products and beers in China. This venture capital firm was founded by Jack Perkowski, a veteran investment banker in the United States. It invested in China mainly by forming joint ventures with SOEs. Perkowski began fund-raising after Thanksgiving in 1993. Before Christmas, he had already raised \$75 million. In six weeks he had raised \$150 million. The demand was so overwhelming that he raised another fund in 1995 with \$160 million (Studwell, 2002).

International venture capital investors' enthusiasm for China was also reflected in the size of the China funds. The mean size of international venture capital funds was \$56.37 million from 1991 to 1993 and \$72.48 million from 1994 to 1997 (Table 4.2).

This is especially striking given that the average venture capital fund size in the United States was only \$50.8 million in 1991, \$64.7 million in 1992 and \$78.9 in 1993.²¹ The average size of international venture capital China funds from 1991 to 1997 was roughly equal to the average fund size in the United States in 1992 and 1993 despite the fact that China was uncharted territory for venture capital investment; and the United States had a head start of more than 30 years in venture capital investment. The lack of institutional investors in China did not seem to be a big problem for venture capitalists in China due to the international investors' enthusiasm.

4.2. SOE Partners and Connection Building

Compared with the United States, China had a much weaker infrastructure for market economy in the early 1990s. The weak infrastructure posed a series of daunting challenges for international venture capitalists. The first challenge was deal flow. In the United States, venture capital firms rely on their reputation to attract potential deals. They also get deal leads through various market intermediaries such as investment banks, accounting firms and law firms. However, such a deal flow structure did not exist in China in the early 1990s. Most of the venture capitalists were investing in China for the first time: they had neither experience nor reputation. Market intermediate institutions, such as investment banks, accounting firms and law firms, were equally unreliable as a means of generating deal leads. In the early 1990s, these institutions had just begun to develop in China. They were generally state-owned and heavily regulated by the government. Their ability to provide deal leads was limited.

²¹ Fenn, Liang and Prowse, 1995, P. 13

The second challenge for the venture capitalists was getting control rights over the VC-backed firms. It is critical for venture capitalists to have control rights of the firms in their portfolio to ensure that their interests are served (Hart, 2002; Gompers and Lerner, 1999; Kaplan and Stromberg, 2002). In the United States, ownership and control rights are usually separated in venture capital investments. Venture capitalists attain control rights through financial instruments such as convertible preferred securities even though they may not have majority ownership. Unfortunately, China's law does not allow the separation of ownership and control rights. Article 4 of China's Equity Joint Venture Law (EVJ law) stipulates that all joint venture partners should share risks and benefits proportional to their capital contribution. This clause is now widely interpreted as allowing the separation of ownership and control.

Another difficulty concerning control rights in China was that China did not have a strong and independent judicial system. An efficient and independent judicial system is critically important to ensure that external investors can exercise their control rights over firms to prevent insider appropriation (La Porta, et al., 1997, 1998). Unfortunately, the rule of law was weak in China. The judicial system is not independent in China: it was subject to the leadership of the administrative branch. Professional standards in the legal field in China were low compared with those in the United States (Alfred, 1995). Judicial decisions were often openly challenged or not enforced (Clarke, 1995). Serious corruption further exacerbated these problems. These problems made China's judicial system unreliable in the area of enforcing contracts and exercising control rights for venture capitalists.

The third challenge for international venture capitalists was how to make sure that China's government extends them a "helping hand" rather than a "grabbing hand." One dilemma in economic development is how to make sure that government is strong enough to enforce contracts on the one hand yet able to keep itself from appropriating from investors on the other (North, 1990). This problem is handled in the United States through an independent judicial system and a liberal democratic system. However, the institutions that secure investors' property rights in the United States did not exist in China. China had neither an independent judicial system nor a liberal democratic system. China's decision-making was closed to the public. It did not have freedom of the press, freedom of association, or a democratic election system that investors could use to influence policy-making. The risk that international venture capital might be expropriated by the Chinese government was high.

A common strategy used by international venture capital firms in the early 1990s to deal with these challenges was to form joint venture funds with SOEs in China. For example, CAM was 60% owned by China Venturetechno International, the international branch of China Venturetech, and 40% owned by James Chapel and Standard Chartered, two Hong Kong-based financial firms. Shanghai Pacific Union Technology Venture was a 50/50 joint venture between America's IDG and the Shanghai Commission of Science and Technology. Table 4.3 shows that 67% of the venture funds in China in the early 1990s were joint venture funds. The local joint venture partners in the international venture capital firms were all SOEs with strong government backing (Table 4.4).

(Insert Table 4.3 and Table 4.4)

International venture capitalists wanted to have SOE partners because they hoped that SOE partners could fulfill some important functions to meet the challenges of investing in China. They believed that SOE partners could help them solve the deal flow problem by providing the necessary information about SOEs not available in the open market. A venture capitalist explains why a partner is critically important:

“Through Sumstar (the partner of Sino-Pacific Light Industry Fund Management), we are able to obtain a good list of potential targets for evaluation. However, the exercise does not end there. For example it’s understood when you go out and try to find good joint venture partners, that you need to feel good about the people involved. If you know a company’s past that will help you to evaluate its management. This type of information is required to assess people’s integrity—without which your chances of success are greatly diminished.

Sumstar helps us to build up historic records. In the western world where records are readily available this relationship may not be necessary. But when you’re dealing with China, some companies are dark and you need that light”.²²

In many joint venture firms, deal flow was generated as follows: first, international venture capitalists proposed general criteria to SOE partners for portfolio firm selection. Based on the criteria proposed by international venture capitalists, SOE partners would use their connections and resources to bring candidates to their international partners. Their international partners would then conduct due diligence on

the proposed investments. A typical example to illustrate the process was the case of the China Light Industry Fund. The fund was a joint venture between Hong Kong-based Sino-Pacific Fund Management and China's Sumstar Group. China's Sumstar Group was a corporation of the China National Council of Light Industry, the administrative agency that managed around 70,000 light industry firms in China. The investment strategy of the China Light Industry Fund was to search the 70,000 SOEs managed by the National Council of Light Industry as investment targets. Through the cooperation of the SOE partners, international venture capital funds avoided relying on SOEs' reputations and China's weak market intermediate institutions to generate deals.

In some cases, international venture capitalists worked with their SOE partners to generate potential deals before they began fund-raising. The China Aeronautical Technology Fund was a joint venture between Tian Lee International and China's Ministry of Aeronautics and Aerospace Industries. Before Tian Lee International began to raise money overseas, it worked with its partners closely to generate a potential list of investees. Then the list of investees was presented to venture capital investors as part of the prospectus. The practice of lining up deals before fund-raising can reduce investor risks and send a credible signal to investors about venture capitalists' abilities to find investments. It makes it easier for international venture capital funds to raise money to invest in China.

The second function of SOE partners was to help international venture capital investors monitor portfolio firms and exercise control rights. In many cases, the government agency that is responsible for supervising the local partner is also the government agency that supervised the potential portfolio firm. For example, the China

²² "Finding the Light,," Jan 1995, *AVCJ*.

Light Industry Fund plans to invest in firms managed by the National Council of Light Industry. The National Council of Light Industry is also the government agency that is responsible for supervising Sumstar Group, the SOE partner of the China Light Industry Fund. The National Council of Light Industry can mobilize government resources to gain truthful information from the fund and discipline managers when necessary. The power of SOE partners to gain information and discipline managers is critically important because of China's weak market intermediate institutions and judicial system.

The third function of SOE partners with strong government backing is to gain government protection against arbitrary bureaucrats. Powerful domestic partners can bring international venture capitalists into China's decision-making circle so that they can influence decision-making in China. For international investors who are outside of the decision making process, it is important to find an insider within China's decision-making system as a partner to protect their interests. One example of the benefit of forming an alliance with government was the approval process for joint ventures. Any joint ventures with SOEs had to be approved by the Chinese government. The decision was totally under the government agency's discretion and there was no effective external supervision over the decision. If an international investor did not have a good relationship with the government agency, the approval process might be slow, or approval might never come through. International venture capitalists also hoped that their SOE partners could help push for policy changes. For example, through Venturetech, CAM tried to lobby for allowing joint ventures to be listed on China's stock exchanges.

International venture capital funds believed that their SOE partners could help them handle these problems because SOE partners had imbedded interests in the success

of the venture capital funds. This strategy was widely used by China's Township and Village Enterprises (TVEs) and private enterprises in the 1990s to protect their interests. Scholars believe that reciprocity between firms and Chinese government agencies is the reason that China was able to achieve successful market reform without changing its political system dramatically (Oi, 1993; Qian, 1997).

However, the strategy of having SOEs as partners incurred significant costs: it weakened the governance structure of venture capital funds. SOE partners are different from venture capitalists in three ways. First, SOE partners are not profit-maximizers. SOEs' main motivation is pleasing politicians, not pursuing profits. They may use the voting rights of venture capital funds to pursue the interest of the Chinese government rather than the interest of the investors. For example, SOE partners in joint venture funds may see the arrival of international venture capital investors as a perfect opportunity to save failing SOEs and push venture capital investors to invest in these firms.

Second, not being able to raise new funds was not a serious threat for SOEs. One of the most potent mechanisms in venture capital fund-raising is that venture capitalists have to raise funds constantly. Venture capitalists understand that if they cannot deliver value to investors, their firms are going to fail. However, SOEs could always count on government backup when they face financial difficulties, and the failure of investment would not lead to their closure.

Third, investors could not rely on the judicial system to force their SOE partners to act in the interests of investors. Venture capitalists hoped that SOE partners could substitute for the judicial system to help them resolve disputes. However, venture

capitalists had little legal recourse if their SOE partners did not act in the best interests of investors.

Besides forming joint venture funds, international venture capitalists could have SOEs as fund advisors rather than co-owners of venture capital firms. The financial stake provided to SOE advisors was much smaller compared with SOE joint venture partners. For example, Cathay Clemente gave 2% of the management fee to support the operation of the China Securities Industry Institute, an institute established by the SEEC; ING Beijing gave a consultancy fee of 0.1% per annum on the net asset value of the company to its advisor, and a fee for sourcing and monitoring investment projects calculated at the rate of 0.65%. SOE advisors have less financial stake in the success of venture capital funds than SOE joint venture partners. The risk of interest conflicts is also reduced because advisors do not have voting rights.

A minority of funds in the early and mid 1990s had neither SOE partners nor SOE advisors. The 17 funds that had no SOE partners raised \$984.14 million, or 31.04% of the total funds raised from 1991 to 1997 (Table 4.3). These funds typically used informal or personal connections to reduce transaction costs in China. For example, an important source of Richard Yan's confidence in forming Richina Fund and investing in China is his connections in China: his great grandfather was the founder of China's prestigious Nankai University and his grandfather was the founder of the Rotary Club in China. The connection with Nankai University made it easy for Yan to enlist the support of Nankai University Press when Richina invested in China (Sahlman and Green, 1995).

Overall, venture capitalists form joint venture funds in China to economize on transactional costs in China. Governance structure is partially sacrificed in this process.

The widespread use of joint venture funds in the early 1990s shows that the institutional environment is a more important concern for investors and venture capitalists than governance structure.

4.3. Investments

4.3.1. The focus on SOEs

The investment strategy of international venture capitalists used in China in the early 1990s is dramatically different from conventional venture capital practices in the United States. In the early 1990s, international venture capitalists were generally not interested in investing in private firms in China; they invested almost exclusively in China's SOEs. Table 3.3 shows that in the early 1990s, 90% of VC-backed firms were SOEs.

The focus by international venture capitalists on SOEs in the early 1990s is surprising because SOEs have weak corporate governance for investors. As discussed above, SOEs have much less incentive to pursue enterprise growth and financial success. The risk that they will not act on behalf of venture capital investors is much higher than the risk for private entrepreneurs.

In addition, venture capitalists cannot use the deal structuring techniques that they use in the United States when they invest in SOEs. In the United States, control rights and ownership are separated in venture capital investment. Venture capitalists usually invest through convertible preferred securities that give them superior control rights even though they do not have to have majority ownership (Gompers and Lerner, 1999; Kaplan and Stromberg, 2002). Unfortunately in China, it is illegal to separate ownership and

control rights. Any international venture capital investment with SOEs has to be structured as joint venture enterprises (JVEs). Article 4 of Joint Venture Enterprise Law in China specifically forbids the separation of ownership and control rights.

Yet despite these difficulties, international venture capitalists focused on investing in China's SOEs in the early 1990s. The lack of investment in private firms cannot be explained by the lack of private firms in China. China allowed private firms from the beginning of the 1980s, and there were more than six million private firms in China in 1992 (Table 4.5). Table 4.5 also shows that the lack of investment in private firm is not caused by the difference in growth rate. Private firms grew much faster than SOE firms in the early 1990s. In fact, the growth rate gap between SOE firms and private firms in the 1990s was the widest in the early 1990s.

(Insert Table 4.5)

Why were international venture capitalists willing to invest in SOEs without much protection? Several reasons related to China's institutional environment may explain the dominance of SOEs in the early 1990s. First, SOEs enjoyed the most favorable access to resources in China (IFC, 2000). SOEs could get capital, human resources, and raw materials from the government at low or no cost. SOEs had a monopoly in many important businesses. They usually had better manufacturing facilities and market positions. These favorable policies gave SOEs enormous advantages.

The second reason for the investments in SOEs was the IPO channel for exiting venture capital investments. In the early 1990s, the Chinese government regulated listing decisions tightly and required any Chinese firm to get government approval before it could be listed on either domestic or overseas stock exchanges. Favorable considerations

were given to SOEs and JVEs whereas private firms had practically no opportunity of getting government approval. Of the 976 firms listed on the Shanghai and Shenzhen Stock Exchanges in 2000, only 11 firms were non-state firms (IFC, 2000). International venture capitalists believed that they had a better chance of obtaining government approval for IPOs if they invested in SOEs.

International venture capitalists that invested in SOEs hoped they could exit by listing their shares on domestic or overseas stock exchanges. In the early 1990s, the IPO prospect for listing VC-backed SOEs looked bright. Investors on the Hong Kong and New York stock exchanges were eager to invest in China's SOEs and JVEs. Although no rule was made to allow JVEs to be listed on China's booming stock exchanges, the prospect of listing JVEs looked hopeful. Shenzhen Stock Exchange was lobbying the central government to allow the listing of JVEs because of the perceived high quality of these firms. Some venture capital funds, such as China Asset Management, also pushed the issue through their joint venture partners in China. Many international investors were optimistic that rules would be made to allow the listing of JVEs on China's domestic exchanges soon.

Third, the inability to use many venture capital mechanisms such as convertible preferred stock did not dampen the enthusiasm of international venture capitalists toward SOEs because many venture capitalists believed that China was different. They believed that a legalistic, contract-centered view of venture capital did not fit China. The prohibition that separated ownership and control rights was actually troubling for some venture capitalists. They tried to attain control rights by having majority ownership in their portfolio firms. For example, Gary Ma, a manager of China Light Industry, says that:

"That's (majority ownership) one of our key requirements that we are able to control these companies. We make sure that we have majority control of the company in terms of ownership and also on the board. Should the need (to control the firm) arise, although I hope it won't, then we're prepared to. Should some variation arise from our budgets then we're ready to change the management. We make this condition quite clear in the beginning and I believe that once the partners know you have this flexibility they will behave differently."²³

Gary Ma's strategy is consistent with Shleifer and Vishny's theory that large share-holding can be an alternative governance mechanism when investor protection is weak (1997). However, many venture capitalists scoffed at the idea of majority ownership to attain control rights as wishful thinking and believed that "the Chinese run the show no matter what percentage of equity you have."²⁴ Dick Kwan explained it:

"Asia is totally different from Europe or the U.S. where the market is mature and sophisticated. You can't rely on the law to protect your investments in an emerging market. To protect yourself, you need to have good connections and good knowledge of the environment.... If the management won't listen to you or the other shareholders, don't come to the meetings, it is useless. In situations like this the law will not do you any good, you need to call up your connections and ask them to help sort out the problem".²⁵

²³ P. 24, Jan 1995, *AVCJ*.

²⁴ *AVCJ*, June 1997, P. 7.

²⁵ "ING Beijing: You can never go wrong with good connections," P.7, *AVCJ*, June 1997

In essence, Dick Kwan argued that complicated contracts and financial instruments were not useful to venture capitalists in China because the judicial system was weak. What truly ran China were connections, not laws and contracts. As long as venture capitalists could cultivate good connections with the Chinese government, those connections would take care of investor protection and venture capitalists could earn profit.

Along this line of thinking, venture capitalists deemed cultivating connections with the Chinese government the key to successful investments in China. The conventional wisdom in China in the early 1990s was that international investors should not go it alone in China. They should find partners and build connections with Chinese government agencies and individual government officials. International venture capitalists relied on connections to generate SOE deal flow, monitor firm performances, push for policy reforms, gain government approval of IPO applications, and protect their interests.

4.3.2. Lack of interest in private firms

The discriminatory policies of the Chinese government toward private firms played an important role in the lack of interest in private firms. In the early 1990s, the dominant ideology still treated private firms as a “necessary evil” in China’s economy. Private firms were supposed to have some gap-filling functions to supplement SOEs but were supposed to cease to exist in the long run. In accord with this hostile ideology, various policies limited the growth of private enterprises in the early 1990s: private enterprises had tremendous difficulties in attaining bank loans, accessing stock markets, and acquiring raw materials and human resources (IFC, 2000; Lardy, 1998). Due to this

hostility, many private entrepreneurs were reluctant to disclose information to outsiders. International venture capitalists were uncertain about the future of private firms and reluctant to make long-term commitment to China's private firms.

In addition, international venture capitalists did not believe that private firms in China had the necessary connections to succeed. China did not have an independent judicial system that could enforce contracts efficiently. International venture capitalists believed that SOEs had a better chance to make profits in China because they had better connections with the Chinese government to help them enforce contracts with suppliers and customers.

In fact, the two VC-backed private firms in the early 1990s had limited exposure to China's institutional environment. These firms were founded by overseas entrepreneurs. Their headquarters were located outside China (Table 4.6). Their main raw materials were imported from overseas and their major markets were located overseas. For example, Upsonics was founded by an entrepreneur from Taiwan to build computer periphery products. Zindart was a toy manufacturer founded by an entrepreneur from Hong Kong. Zindart's biggest customer was the U.S. Hallmark Cards. These firms invested in China mainly to use the cheap labor and land in China. Their strong overseas connections meant that they could use overseas judicial systems to protect their property rights and enforce contracts. The focus on private firms founded by overseas entrepreneurs shows that the institutional environment has an important influence on firms' operating strategies.

(Insert Table 4.6)

4.3.3. Stage of VC-backed firms and type of industry

In the early 1990s, the VC-backed firms were generally established firms. The data set of 266 investments does not contain information about the stage of the firm. Instead, this research uses the investment preferences of international venture capital funds in *AVCJ's Annual Guides* as a proxy for international venture capitalists' interests in early-stage firms. Table 4.7 contains 36 funds out of the 61 China funds from 1991 to 2001. The remaining 25 China funds are not included in the table for two reasons. First, some venture capital firms, such as Swiss Life Private Equity, do not report their investment preferences. Second, some international venture capital firms, such as WI Harper, have multiple funds under their management. Their China funds are only part of the funds under their management. Since the *Annual Guides* report investment preferences by venture capital firms, it is impossible to know whether the stated investment preferences actually reflect the investment preferences of their China funds. I examined other characteristics of the excluded 25 funds and did not find systematic biases.

(Insert Table 4.7)

Table 4.7 shows that less than 40% of venture capital funds were interested in early-stage firms in the early 1990s. The actual investments in early-stage firms should be much lower. Many venture capitalists described their investment targets as companies with strong cash flow and expected high dividend payout. China Investment Corporation (CIC) described its target investments as "strong cash flow, stable management and existing distribution both home and abroad".²⁶ CIC wanted to invest in positive cash flow companies and expected high dividends and rapid earnings. The China Light Industry

Fund stated their target firms had "an operating history, strong asset backing, experienced management" and required additional capital to finance expansion.²⁷ The emphasis on profitable and later-stage firms is understandable since the risk of investing in established and profitable firms is much smaller than the risk of investing in young entrepreneurial firms.

The desire of international venture capitalists to invest in profitable and established firms in China may also have hurt the chances of private firms in China to get venture capital. In the early 1990s, it was difficult to find private firms that could satisfy these conditions. Table 4.5 shows that the average size of private firms in China was extremely small: only about 26,000 RMB (about \$5,000) a year. Years of discriminatory policies had limited the size of private firms. Many private entrepreneurs were careful not to let their firms grow big for fear of political prosecution. Although China's reforms in the early 1990s unleashed an enormous growth of private firms, most private firms were still in an early stage. The average SOE was much larger, and many SOEs had a good growth rate. These factors made international venture capitalists feel that SOEs were better bets.

In the early 1990s, international venture capitalists were generally interested in low-tech industries. Of the 45 international venture capital funds raised between 1991 and 1997, only funds established by IDG, H&Q Asia and Walden Group claimed to be interested in high-tech investment. Most other firms did not want to invest in high-tech projects in China. The story of CAM is illustrative. The domestic partner of CAM, Venturetech, was founded by the Chinese government to promote high-tech industries in

²⁶ *ACVJ*, May 1993.

²⁷ *AVCJ*, September 1993.

China. CAM itself excluded high-tech industries and start-ups as investment targets.²⁸ These exclusions demonstrated the lack of confidence in high-tech industries by international venture capitalists.

Table 3.4 shows that industrial manufacturing and consumer products accounted for about 78% of total VC-backed firms in China in the early 1990s. The only IT firm in the early 1990s was Upsonics, founded by a Taiwan entrepreneur to produce computer periphery products. The focus on low-tech firms is consistent with the prediction of agency theory: A weak institutional environment should increase agency costs and force venture capitalists to focus on low-agency-cost projects such as investing in low-tech firms.

4.4. Summary

In the early 1990s, venture capitalists sought to form joint venture funds with SOEs and invested in SOEs. The main reasons for doing business with SOEs were to reduce transaction costs and to take advantages of the policy benefits granted to SOEs in China. In both cases, governance structure was weakened. The venture capital investment pattern in the early 1990s shows that China's institutional environment had an important effect on venture capital investments in China. The next two chapters will show that as China's institutional environment improved, the need to economize on [minimize] transactional costs decreased and venture capitalists became more reluctant to sacrifice governance structure in their investments.

²⁸ *AVCJ*, July 1995, P.5.

Table 4.1: Distribution of Fund-Raising by Domestic/International Funds

This table summarizes the distribution of fund-raising by domestic/international funds by time period. The data for the table came from *AVCJ*'s 2002 Guide to Venture Capital in Asia. Dollar amounts are adjusted for constant 2000 dollars.

Period	Domestic				International				Total
	Number of Funds	Avg Fund Size	Sum (\$ Mil)	% in Total	Number of Funds	Avg Fund Size	Sum (\$ Mil)	% in Total	Total (\$ Mil)
1991--1993	3	14.28	42.85	4.23%	20	48.45	969.05	95.77%	1011.91
1994--1997	1	8.78	8.78	0.35%	31	81.52	2527.26	99.65%	2536.04
1998--2000	47	35.42	1664.61	64.14%	12	77.54	930.50	35.86%	2595.12
Sum	51	33.65	1716.25	27.94%	63	70.27	4426.82	72.06%	6143.06

Table 4.2: Distribution of International Venture Capital Fund Size by Time Period

This table presents 61 international venture capital fund data from *AVCJ*, 2001. It has only 61 international venture capital funds rather than 63 international venture capital funds in Table 5.1 because it drops two funds raised by international government and universities. The dollar unit in the table is million dollar. This table presents both nominal and discount dollar because professional venture capital journals normally present data in nominal dollar while academic research tends to prefer data in constant dollar.

Period	Nominal Dollar				Constant 2000 Dollar				
	Number of Funds	Avg Fund Size	Med Fund Size	Std Dev.	Avg Fund Size	Med Fund Size	Std Dev.	Sum	% of Total
1991--1993	20	56.37	41.5	46.57	68.45	49.46	56.19	1369	28.84%
1994--1997	30	72.46	52.75	57.38	82.17	60.44	64.35	2465.1	51.94%
1998--2000	11	81.98	50	124.87	92.94	51.68	124.63	1022.34	21.54%
Total	61	68.9	50	70.48	77.81	58.1	75.06	4746.41	100.00%

Table 4.3: Distribution of International Venture Capital Fund Organizations in China

This table presents the distribution of 61 international venture capital funds' organizational forms in China from 1991 to 2000. The dollar amount in this table is constant 2000 million dollar. Joint Venture Funds are funds that have SOEs as their joint venture partners. Advisor funds are funds that have SOEs as their advisors. "No partner" funds are funds that do not have a formal partner. Finally two funds' partner situation is unknown.

Year	Joint Venture			Advisor			No Partner			Unknown Partner Situation		
	# of Funds	Avg Fund Size	% Of total	# of Funds	Avg Fund Size	% Of total	# of Funds	Avg Fund Size	% Of total	# of Funds	Avg Fund Size	% Of total
1991--1993	12	76.33	66.90%	2	98.19	14.34%	5	46.44	16.96%	1	24.55	1.79%
1994--1997	12	97.36	47.39%	2	69.72	5.66%	15	74.38	45.26%	1	41.71	1.69%
1998--2000	2	62.82	13.77%	0	0.00	0.00%	9	87.42	86.23%	0	0	0.00%
Total	26	84.99	46.56%	4	83.95	1.77%	29	73.61	44.97%	2	33.13	1.40%

Table 4.4: International Venture Capital Funds and Their Local Partners

This table presents the 26 international venture capital funds founded between 1991 and 1997 that had local partners. The sources of the data included: *AVCJ, Annual Guide to Venture Capital in Asia* (various issues), *AsiaWeek* and *AsiaMoney*. All local partners were joint venture partners unless indicated in the last column.

Name	Year Founded	Size	Fund Managers	International Venture Capital Firms	Domestic Partners
China Assets Holdings	1991	72	China Asset Management	James Chapel, Standard Chartered	Venturetech
Pearl River Delta Fund	1991	12.82	Sun Hung Kai	Sun Hung Kai	Yue Xue Finance (Guangzhou City Government)
BOC China Funds	1992	150	BOC China Fund Management	14 corporations in HK	Bank of China
China Investment and Development Fund	1992	85	Kleinwort Benson	Kleinwort Benson	China International Trust and Investment Corporation, People's Insurance Company (Advisors)
Clemente Asia	1992	75	Cathay Clemente	Cathay Clemente	Stock Exchange Executive Council (SEEC) (Advisor)
Ka Wah China Fund	1992	60	KWR Asset Management (Ka Wah Bank, Rothschild & Sons)	KWR Asset Management (Ka Wah Bank, Rothschild & Sons)	Guangdong Development Bank, Some municipal governments in Guangdong
Kwong Wah Investment Fund	1992	20	First Eastern Investment	First Eastern Investment	GITIC
Beijing Pacific Union Technology Venture Fund	1993	25	IDG Technology	IDG Technology	Beijing Pacific Union Technology Venture
China Merchants China Direct Investments	1993	100	First Eastern Investment Group	First Eastern Investment Group	China Merchants China Investment Management
Shanghai Pacific Union Technology Venture Fund	1993	20	IDG Technology	IDG Technology	Shanghai Pacific Union Technology Venture
Shanghai International Shanghai Growth	1993	64	Kwang Hua Asset Management	Kwang Hua Asset Management	Shanghai International Trust and Investment Corporation
China Light Industry Fund	1993	33	Sino-Pacific Fund Management	Sino-Pacific Fund Management	Sumstar Group Corporation

China Aeronautical Technology Fund	1993	185	Tien Lee International	Tien Lee International	Ministry of Aeronautics and Aerospace Industries
PSB China Fund	1993	25	PSB Investment	PSB Investment	Broadsino (Bank of China Jiangsu Branch and Jiangsu Investment Company)
ING Beijing Investment Co. Ltd	1994	100	Baring Capital (China) Management Ltd.	Baring Capital (China) Management Ltd.	Beijing Investment & Information Advisory Service Center (Beijing Municipal Government) (Advisor)
Guangdong Development Fund Ltd	1994	85	Guangdong Investment Management Fund Ltd/First Eastern Investment Group	Guangdong Development Fund Ltd/First Eastern Investment Group	Guangdong Development Fund (Guangdong Provincial Government)
Guangdong Pacific Technology Venture Fund	1994	10	Guangdong Pacific Technology VENTURE CAPITAL Management /IDG Technology Venture Investment Inc	Guangdong Development Fund Ltd/IDG Technology Venture Investment Inc	Guangdong Pacific Technology Venture
China Dynamic Growth Fund	1994	83.2	H&Q Asia Pacific (HK)/China Dynamic Investment management(HK) LTD	H&Q Asia Pacific (HK), Aetna Life and Casualty, Silvercrest International	Bank of China
The China Investment & Development Fund Ltd II	1994	20	Klenwort Benson China Management Ltd.	Klenwort Benson China Management Ltd.	China International Trust and Investment Corporation, People's Insurance Company (Advisors)
Northrinco Fund	1994	182	China North Industries Investment	HG Asia	China North Industries Group

Citicorp Everbright China Fund	1995	102	Citicorp Everbright China Fund Management	Citicorp Asia, Mithras	China Everbright International Trust & Investment
China Canton Investments Ltd	1995	53	First Eastern Investment Group, Keppel Group	First Eastern Investment Group, Keppel Group	Yue Xiu Enterprises, Guangzhou Municipal Government
The China Retail Fund	1996	186	AIG Investment corporation (Asia) Ltd	AIG Investment corporation (Asia) Ltd	Ministry of Internal Trade
Sinochem Investment Ltd	1996	45	First Eastern Investment Group	First Eastern Investment Group	Sinochem
Capital	1997	200	Gateway International Investment Co. Ltd	East China Capital	Zhejiang Materials Industry Group Company
Sino-Swiss Partnership Fund	1997	58	State Development Bank of China	Swiss Government	Chinese Governments

Table 4.5: Growth of SOEs and Private Firms in 1990s

This table compares the growth of private firms and SOEs in China in the 1990s. Data in this table, except growth rate, are denominated by constant 1991 RMB. \$1 was equal to 5.5 RMB before 1994 and has been equal to between 8.2 and 8.8 since 1994. (Source: China National Bureau of Statistics, 2002, *China's Statistical Yearbook*)

Items	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Total Number of Private Firms (Thousand)	6,387	6,854	7,971	8,007	5,688	6,211	5,975	6,034
Total Number of SOEs (Thousand)	105	103	105	102	118	128	110	65
Growth rate of Private Sector	38%	58%	60%	57%	29%	36%	3%	14%
Growth rate of SOE Sector	5%	5%	0%	12%	15%	2%	-4%	7%
Average output, Private Firm (Thousand RMB)	26	35	56	124	147	207	211	238
Average output, SOE Firm (Thousand RMB)	15,243	15,755	16,210	15,767	16,760	19,848	32,518	36,865
Growth of Private Firm average output	28%	36%	59%	121%	19%	41%	2%	13%
Growth of SOE average output	7%	3%	3%	-3%	6%	18%	64%	13%

Table 4.6: Geographical Locations of Private Firms in China

This table summarizes the location of 171 VC-backed private firms in China from 1991 to 2001

Location	Total		1991--1993		1994--1997		1998--2001	
	Freq	%	Freq	%	Freq	%	Freq	%
Overseas (Including Hong Kong, Taiwan and the United States)	27	15.79%	2	100.00%	11	35.48%	14	10.14%
Mainland China	144	84.21%	0	0.00%	20	64.52%	124	89.86%
Total	171	100.00%	2	100.00%	31	100.00%	138	100.00%

Binomial Test 1: % of overseas location in 1991 to 1997 was equal to the % of overseas location from 1998 to 2001: P=0.00

Table 4.7: Distribution of Stated Investment Stage Preferences

This table summarizes the stated investment stage preferences of international venture capital funds in China. Data in this table are collected from various directory of *Asia Venture Capital Journal's* Annual Directory to Venture Capital in Asia. All funds in this table are raised to mainly invest in mainland China.

Stages	1991--1993		1994--1997		1998--2001	
	Number	%	Number	%	Number	%
Seed/Start-up	5	38.46%	10	62.50%	5	71.43%
Expansion	12	92.31%	16	100.00%	6	85.71%
Mezzanine	3	23.08%	7	43.75%	2	28.57%
Buyout/Turnaround	1	7.69%	3	18.75%	0	0.00%
Total	13	100.00%	16	100.00%	7	100.00%

CHAPTER 5: 1994 TO 1997: IN SEARCH OF NEW DIRECTIONS

5.1. Performances of VC-backed SOEs

The year 1994 was a tough year for venture capitalists who invested in SOEs in China. First, the long-anticipated policy change to allow JVEs to be listed on China's domestic stock exchanges did not materialize. Many international venture capitalists had invested in China in the early 1990s with the expectation that the Chinese government would allow joint venture firms to be listed soon. However, the Chinese government saw the arrival of stock markets in China as a perfect tool to reform ailing SOEs. To ensure that SOEs had priority in getting IPOs, the Chinese government regulated the IPO process tightly. A quota system was established in the early 1990s. Under the quota system, each year an IPO quota was allocated to various governmental agencies like Beijing Municipal Government and Shanghai Government. These agencies could use their quota to recommend to the China's Securities Regulatory Commission (CSRC) that a firm be listed. CSRC usually approved these recommendations. Thus, the most important step in gaining approval for an IPO on China's stock exchanges was to receive a recommendation from a Chinese government agency that had IPO quota. SOEs were heavily favored under the quota system. It was highly unlikely for joint venture firms in which international venture capitalists had invested to gain IPO approval. Table 5.1 lists IPO of each VC-backed firm in China. Only three VC-backed firms were successful in gaining IPO approval from the Chinese government.

(Insert Table 5.1)

Second, the Chinese government enacted its first Corporation Law at the end of 1993. This Corporation Law is a milestone in China's reform because it recognizes for

the first time that a corporation is an independent identity in the economy. However, to the disappointment of many venture capitalists, the new Corporation Law makes it impossible for international venture capitalists to exit through domestic listing. An important clause in the law separates stocks into three categories: common shares, SOE shares and legal person shares. Among these three kinds of shares, only common shares are negotiable. SOE shares and legal person shares are not negotiable.²⁹ The shares owned by venture capital firms are non-negotiable legal person shares. This classification means that international venture capital firms cannot sell their shares even if they are listed in China's domestic stock markets. The few international venture capital firms that were successful in having their portfolio firms listed had to fight with China's bureaucracy to sell their shares. It was not until the year 2000 that the Chinese government finally allowed the transfer of legal person shares held by international investors in China's B share market. Until now, China has not allowed the transfer of legal person shares held by international investors in China's A Share market. International venture capital firms that have a large holding of A legal person shares, such as CAM, still must wait for a government policy change to profit from Lukang's IPO in 1997.

Third, the prices of listed SOEs on overseas stock exchanges collapsed. SOEs were greeted enthusiastically in overseas stock exchanges in 1993. However, the prices of SOEs were built on some unrealistic assumptions. Many investors believed that the growth rate of 1992 and 1993 was sustainable. Based on this assumption, international investors projected that China would be the largest car market by 2000 (Studwell, 2002).

²⁹ This strange clause was made as a political compromise between reformers who wanted property rights to be freely traded and conservationists who wanted to restrict the transfer of SOE shares to private

These assumptions were quickly proven to be incorrect in 1994. The investment mania in China in the early 1990s overheated China's economy: The growth rate and inflation rate in China reached 13.5% and 14.7% in 1993; 12.6% and 24.1% in 1994. In response to the overheated economy, the Chinese government adopted many austere policies in 1994 to curb inflation. These policies dampened investment rates significantly. The growth rate decreased to 9% in 1995 while the inflation rate decreased to 16.8% in 1995, 8.8% in 1996 and 3.1% in 1997 (China National Bureau of Statistics, 2002). As a consequence of the austere policies, the realized profits for SOEs in overseas stock exchanges were much lower than expected. For example, First Boston predicted that the price of Brilliance Automotive would be \$1.5 per share in 1994 whereas its actual profit was only \$0.2 per share (Studwell, 2002). Not surprisingly, the prices of listed SOEs in overseas stock markets dropped heavily in 1994. As of April 1994, only two of the nine China SOEs or JVEs listed in Hong Kong were trading above their IPO prices. The once high-flying Denway investment lost 80% of its value in 1994.

The sharp drop of SOE prices on overseas stock exchanges caught venture capitalists in surprise. Many of their investments were made based on the valuation of SOEs on overseas stock exchanges. The sharp price drop meant that many of their investments would be lost. The cold response to SOE shares in overseas stock markets forced many international venture capitalists to postpone seeking listing on overseas stock markets.

To make matters worse for venture capitalists, the Chinese government responded to the disappointing price performances of listed SOEs and JVEs in Hong Kong not by improving corporate governance but by temporarily ending the approval of overseas

listing in 1995. This abrupt policy change disrupted many venture capitalists' plans. Although this policy was reversed in 1995, it highlighted the enormous risks of investing in China.

Fourth, the overall financial performance of SOEs kept deteriorating in the 1990s. Little did many international venture capitalists realize that the 1994 was just the beginning of a long decline for SOEs in China's economy (Steinfeld, 1998). Most of China's centralized planning had been abolished in 1993 due to market-oriented reforms. Although SOEs continued to receive favorable treatments from the Chinese government, the government no longer guaranteed raw materials and the sales of final products for SOEs. SOEs were generally ill prepared to compete with private enterprises for raw materials and customers. Their financial situations deteriorated as a consequence. A vibrant private economy benefited from China's market-oriented reforms and private firms' share of the total output in China increased steadily in the 1990s (Table 4.5).

Many VC-backed SOEs were not spared the overall decline of SOEs. Although international venture capitalists generally knew how to survive and prosper in a market economy, they found it difficult to use their skills to help their SOE investments because they did not have control rights. Many international venture capitalists sought to gain control rights through having SOE partners. However, when these partners decided that it was more important to keep current CEOs than to lose money, international venture capitalists had little leverage over them.

Majority ownership did not seem to help venture capitalists obtain control rights either. Since the judicial system was weak in China, minority owners in VC-backed SOEs could win out frequently in disputes through their strong connections with the

Chinese government. An excellent case to illustrate the ineffectiveness of majority control in China is ASIMCO's investment in the Beijing Five Star. ASIMCO purchased 63% of the Five Star Beer Company in Beijing in 1995. According to the agreement, the general manager of the company was to be nominated by the Beijing First Light Industry Bureau (BFLIB), the minority holder, and ASIMCO was to decide whether it would accept or reject the candidate. In 1995, the general manager of the company was fired by ASIMCO and a new manager was needed. BFLIB nominated two candidates. They both were rejected by ASIMCO. ASIMCO pressed for more candidates, but BFLIB insisted in one particular candidate despite continued objections. In the end, ASIMCO accepted the candidate "proposed" by BFLIB.

The changes discussed above produced enormous difficulties for international venture capitalists in China. However, many of them dismissed these difficulties as "short-term" and expected them to disappear in the long run. They hoped that as China's economy recovered and the Chinese government changed its policies, they would be able to reap huge profits. A venture capitalist explains in 1995:

"For anyone taking a five to ten year view, the China market has fantastic investment opportunities. Trying to pick the right time to come in is almost impossible to achieve, and, in my opinion, it's a mistake to try and do that."³⁰

Under this belief, many international venture capitalists did not reduce their commitments to China. Funds continued to flow into China in the mid-1990s. Venture capital investments in China actually reached a peak in 1995 and remained at a high level in 1996 despite the difficulties of operating in China (see Figure 3.1). Investors also failed to notice the change in institutional environment in China and stuck to their old

strategy of investing in SOEs China. Table 3.3 shows that SOEs still accounted for 62.92% of the investments in the mid-1990s. Close to half of the venture capital funds (47.39%) were still joint venture funds with SOEs (see Table 4.3).

The insistence on these old strategies was costly for international venture capitalists. Many policies that international venture capitalists had hoped would be quickly reversed were not: The quota system was not abolished until 2000; no rule has been made to allow JVEs to be listed in China's stock exchanges; the legal person share rule still exists; and SOEs continue their long decline as economic reforms deepen and private firms rise. As a consequence, almost all investments in SOEs have had disastrous outcomes.

There is no direct evidence on the performance of VC-backed firms in the early and mid 1990s, but several proxies indicate that it is likely to have been dismal. The first proxy is whether a venture capital firm that raised a fund to invest in China was able to raise a second fund to invest in China. This is a good proxy to measure performance because the self-liquidating mechanism of the limited partnership is one of the most powerful mechanisms to prevent opportunism in venture capital financing. Failure to satisfy previous investors usually leads to failure in raising new funds (Fenn, Liang and Prowse, 1995). Of 33 international venture capital firms that raised a fund to invest in China between 1991 and 1997, only one firm was able to raise new funds to invest in China after 1997. This one exception, IDGVC, is a corporate venture fund whose corporate parent contributes a significant portion of its capital. Some venture capital firms, such as Walden International and H&Q Asia, continued to be active in China after

³⁰ "Fund-raising in 95: Outlook, News and Views,," P. 20, April 1995, *AVCJ*.

1997. However, they do not raise new China funds because of excessive China risk. They use regional funds to invest in China.

The second proxy for performance is the performances of listed venture capital funds. Due to the difficulty of getting IPO approval from the Chinese government, some venture capital funds decided to list themselves to provide liquidity for investors. Most of these funds were listed between 1992 and 1994. *AVCJ* tracked these funds' performances monthly. Table 5.2 presents the performance of the 11 venture capital funds based on *AVCJ*'s data. It shows that in 1998, on average, the share prices of these funds were only 48% of their IPO prices.

(Insert Table 5.2)

The 11 listed venture capital funds in Table 5.2 include some extremely well connected venture capital funds. However, there is no indication that a good connection is helpful to fund performance. Of these funds, China Asset Management (CAM) probably has the most powerful partner in China. Its partner, Venturetechno, is the first SOE venture capital firm in China backed by China's Ministry of Finance and Ministry of Science and Technology. Venturetechno is known as a "princeling" company in China because the backers of Venturetechno included the daughter of Deng Xiaoping. Yet with a -77% decline from its IPO price, CAM was one of the worst-performing funds.

The third proxy is the performance of listed VC-backed SOEs. One of the most powerful indicators of venture capital success is whether VC-backed firms can grow into solid blue chip firms. Table 5.1 shows the performance of listed VC-backed SOEs. All except one VC-backed firm lost value compared with their IPO price. Only one VC-backed SOE was able to deliver a growth rate higher than 20%. This contrasts markedly

with China's strong economic growth in the 1990s and the bull markets in the United States and Hong Kong.

It took a few more years before it became apparent how unwise it was to invest in SOEs. The number of VC-backed SOEs in the sample decreased from 26 in 1994 to 4 in 1997 (see Table 3.3). The collapse of confidence in SOEs made many investors lose faith in venture capital investment in China. In 1997, fund-raising in China reached a nadir with only \$96 million raised, less than 10% of the \$1.028 billion raised in 1995 (*AVCJ*, 2001). The total investment hit bottom the next year in 1998 (Figure 3.1).

5.2. The arise of VC-backed Private Firms

At the same time as the position of SOEs began to deteriorate, private enterprises began to develop in China. The market-oriented reforms provided private enterprises greater room to grow. The growth rate of the private sector was much higher than the growth rate for SOEs in the 1990s (Table 4.5). The fast growth of private firms in China began to catch the attention of international venture capitalists in the mid 1990s. By that time, the percentage of VC-backed private firms grew from 8.7% to 34.83% (see Figure 3.1).

The private firms backed by venture capital in the mid 1990s can be divided into three groups. The first group consists of firms founded by overseas entrepreneurs. China pursued an export-led development strategy aggressively in the 1990s. Various favorable tax breaks were granted to exporting firms. For example, a firm that was mainly engaged in the exporting business did not have to pay value-added tax. Firms with foreign investors that targeted international markets were particularly welcome in China. Speedy

approval was usually granted to these firms. Attracted by these policies and China's cheap labor, many overseas entrepreneurs moved their operations to China (Fu, 2000). International venture capitalists continued to invest in these firms founded by overseas entrepreneurs in the mid-1990s. Ta Fu International, a wood manufacturer founded by a Taiwanese entrepreneur, and Elegance International, a glass manufacturer founded by a Hong Kong entrepreneur, are excellent examples of VC-backed private firms founded by overseas entrepreneurs. These firms tended to be in low-tech industries such as toys and construction materials.

The second group of VC-backed private firms consists of firms founded by overseas returnees. Different from overseas entrepreneurs, these overseas returnees typically were born and raised in China. More than 100,000 Chinese left China after 1978 to find new opportunities overseas, especially in developed countries such as the United States, Japan, and Europe. China's fast-growing economy has attracted some of them back to China to find new opportunities. These overseas returnees are typically highly educated in science and technology. They see China as the next frontier of the information technology revolution and want to build high-tech firms that target China as their major markets. They are very familiar with the process of entrepreneurship in the United States and pursue venture capital aggressively.

International venture capitalists feel that overseas returnees are the right candidates to exploit China's market because overseas returnees have cultural advantages in understanding China and a good knowledge of a market economy. Chang Sun, the

managing director of Warburg Pincus, comments on the advantages of western educated Chinese:³¹

“One key factor is that these overseas returnees know the mechanisms of market economy. They learned some fundamental concepts of market economy. One of the most important concepts is to be responsible for stockholders: it is important to submit reports to stockholders, to attain the agreement of minority holders in major decision-making and to protect the interests of minority holders. The second key factor is that they have broad horizon and they often have unique perspectives about many things. The third key factor is that they are open-minded with regard to management. They are willing to absorb the latest management know-how and practice it. Finally, the enterprises they found are private enterprises. There is no fundamental conflict of interests (between entrepreneurs and venture capitalists).”³²

One of the earliest firms founded by western returnees was UT Starcom, a NASDAQ-listed telecom equipment manufacturer founded by Hongliang Lu and Ying Wu. Ying Wu was born in Beijing and received an engineering degree from New Jersey Institute of Technology. He had been an engineer at Bell Labs before he founded UT Starcom. Hongliang Lu was born in Taiwan and received a Bachelor's degree from UC Berkeley. Softbank invested in the firm in 1995. Another early firm was Asiainfo, a telecom system integrator and telecom software provider. Both of its founders, Edwards

³¹ Chang Sun himself is a western educated Mainland Chinese. He got his MBA degree from Wharton, University of Pennsylvania.

³² “The Bridge to Capital: Interview with Chang Sun,” Lihui Chen, 2000.

Tian and James Ding, earned their undergraduate degrees in China and graduate degrees in the United States. Asiainfo was initially founded in Texas after Tian and Ding found an angel investor. The firm was moved to China in 1995 to build Internet infrastructure in China. Warburg Pincus, ChinaVest, and Fidelity invested in Asiainfo in 1997, and it was listed on the NASDAQ in early 2000.

A category of VC-backed private firms in the mid-1990s is firms founded by domestic entrepreneurs. These firms became more attractive to international venture capitalists as China's market-oriented reform deepened and private enterprise gained more room to grow in China. However, investing in firms founded by domestic entrepreneurs was usually a difficult process because many domestic entrepreneurs had little idea what venture capital was in the mid 1990s. In addition, years of political persecution had made them reluctant to disclose information to outsiders. Venture capitalists had to take the initiative to approach these firms and spend considerable amount of time to educate domestic entrepreneurs about the merits of venture capital investments. Because of these difficulties, the complete process of investing in these firms often took a long time in the mid 1990s.

One of the earliest venture capital investments in firms founded by domestic entrepreneurs was in Stone Richsight in 1997. The firm is a software company founded by one of China's best programmers, Zhidong Wang. The Stone Richsight deal was generated by Bo Feng, an investment banker from Robertson Stephens. Feng first approached Wang and persuaded him to consider venture capital in 1995. During that time, Stone Richsight was one of the leading software enterprises in China. It took Wang eight months to write a business plan that was satisfactory to Feng. After the business

proposal was finished, Wang panicked over losing control rights and wanted to withdraw. Feng had to persuade Wang again that venture capital financing was critical to achieving fast growth. It took Bo Feng about two years to close the deal (Sheff, 2002).

The investment process was also difficult also because little good information about private firms was available. Dekang Software is an excellent example. Dekang Software is a leading telecommunication billing software supplier in China. After Gong Jianhong, the founder of Dekang, agreed to explore the opportunity of venture capital investment, venture capitalists from ChinaVest worked as Dekang's staff at Dekang's office for two months just to understand the operation of the firm (Chen, 2001). Such a long due diligence process is costly to venture capitalists. However, they felt that the hard work was necessary to overcome the weak information market in China.

A notable change in the mid-1990s was that many VC-backed private firms targeted China as their major markets. While firms founded by overseas entrepreneurs mainly targeted overseas markets, firms founded by domestic entrepreneurs and overseas returnees typically considered Mainland China to be their major market. The increased investment in firms that relied on China's market show that venture capitalists had become more confident that private firms could succeed in China.

The new strategy of investing in firms founded by domestic entrepreneurs and overseas returnees was still unproven in the mid 1990s. The biggest concern with pursuing this strategy was whether these firms could have IPOs. International venture capitalists who pursued this strategy hoped that they could exit through overseas stock markets like NASDAQ. The success of this exit strategy depended on a number of factors, such as whether overseas investors would welcome investment in private firms in China.

The next chapter discusses factors that influenced the success of investing in private firms.

Table 5.1: IPOs by VC-Backed Firms

This table presents 18 venture backed IPOs. These 18 firms were invested by international venture capitalists from 1991 and 2001. Data in this table were collected from *AVCJ* and various Prospectuses.

Listed Firms	Industry	Stock Exchange	Nature of the Firm	IPO Date	Annualized Stock Price Change Since IPO	Annual Sales Growth since IPO
Yuchai Diesel	Diesel Manufacturing	NYSE	SOE	1994	5%	32%
Hangzhou Kaidi	Textile	Shenzhen A	SOE	1996	-26%	-33%
Wuxi Little Swan	Consumer Electronics	Shenzhen B	SOE	1996	-4.80%	5.50%
Guangdong Kelon	Consumer Electronics	Hong Kong SE	TVE	1996	-4.40%	10%
Lukang Pharmaceutical	Pharmaceuticals	Shanghai A	SOE	1997	-10.40%	15%
Ta Fu International	Wood and Timber Products	Hong Kong SE	Private	1996	-45%	-34%
Zindart	Toy	NASDAQ	Private	1997	-5.40%	1.50%
Eagle Brand	Ceramics	Singapore	TVE	1999	-9.70%	-27%
Asiainfo	Telecom service & Software	NASDAQ	Private	2000	-49.50%	-17%
UTStarcom	Telecom equipment	NASDAQ	Private	2000	-8.80%	63%
Sina.com	Internet Portal Site	NASDAQ	Private	2000	8.20%	42%
Sohu.com	Internet Portal Site	NASDAQ	Private	2000	83%	120%
Netease.com	Internet Portal Site	NASDAQ	Private	2000	213%	170%
Kingdee Software	Software	Hong Kong GEM	Private	2001	60%	59%
Skyworth	Consumer Electronics	Hong Kong SE	Private	2000	-4.60%	34%
Mediation	Advertisement	Hong Kong GEM	Private	2002	-73%	-22%
Harbin Brewery	Beer	Hong Kong SE	Private	2002	85%	39%
Ctrip	Internet Travel	NASDAQ	Private	2003	-	-

Table 5.2: The Performances of Listed Venture Capital Funds

This table presents the listed fund price performances for 11 venture capital China funds founded between 1991 and 1997. The data on this table came from *AVCJ's* monthly fund monitor in each issue from 1995 to 1998. The last four columns stand for the price as of the dates compared with IPO prices.

Fund Name	Launch Date	Exchange Listing	Performance 95/07	Performance 96/07	Performance 97/07	Performance 98/07
			relative to IPO, %	Relative to IPO, %	Relative to IPO, %	Relative to IPO, %
Cathay Investment Fund Ltd	92	Hong Kong	4.88	9.76	24.39	-22.56
China Assets Management (Holdings)	91	Hong Kong	-65.91	-64.16	-38.23	-77.04
China Investment & Development Fund	92	London	-38.48	-4.29	-4.76	-14.29
China Investment Co.	92	London	-12.74	-30.19	-42.45	-42.45
China Merchants China Direct Investment Ltd	93	Hong Kong	-9.04	-48.86	-23.69	-65.81
China North Industries Investment Ltd.	94	Singapore/Dublin	-4.81	-55.77	-66.83	delisted
CMEC China Industrial Holdings	94	Dublin		-0.76	-0.19	delisted
Guangdong Development Fund	94	London	-43	-40	-40	-40
ING Beijing Investment Co	94	Hong Kong	-39.81	-26.85	5.56	-66.67
Shanghai International Shanghai Growth Investment	94	Hong Kong	-43.27	-42.79	-37.5	-93.16
SHK China Industrial Investments	92	Hong Kong	2.5	2.5	-7.5	-75
Mean			-25.45	-28.29	-23.24	-52.71

CHAPTER 6: 1998 TO 2001: THE SECOND WAVE OF VENTURE CAPITAL INVESTMENTS

6.1. The Dominance of Private Firms

6.1.1. Institutional Changes

Several important changes happened in the late 1990s that fundamentally changed international venture capitalists' perceptions of private firms in China. First, China's market-oriented reforms provided a much more friendly environment for private firms to grow in China. In 1997, China's Communist Party announced that the private economy is "an important component" of China's economy. In the context of Chinese politics, this language change was a fundamental change of policies: Private enterprises were no longer expected to cease to exist in the long run. China's Constitution was amended in 1999 to further promote the status of private ownership. Private firms were allowed to be listed on China's domestic stock exchanges in the late 1990s. The listing quota system that heavily favored SOEs was abolished in 2000. These more-secure property rights have encouraged private firms to plan for long-term development and to be more receptive to external financing.

China also strengthened its judicial system in the 1990s. At the end of 1993, China called for the establishment of a rule-based system for the market economy and emphasized the importance of building institutions to support the market economy (Qian, 2000). Measures were taken to improve the quality of personnel and increase the professionalization of China's judicial system. The number of licensed lawyers grew quickly from 60,000 in 1991 to more than 100,000 in 2000 (China State Council

Information Office, 2000). In 1999, the principle of rule of law was formally incorporated in China's Constitution. The improvements in the rule of law reduce the need to rely on connections to enforce contracts in China (Guthrie, 1998). International venture capitalists came increasingly to believe that private firms could succeed in China's market.

At the same time, China's market intermediate institutions, such as accounting firms, experienced dramatic growth in the 1990s. In the early 1990s, China had a small number of trained accountants. A series of reform measures in the 1990s greatly boosted the growth of accounting firms in China. China allowed joint venture accounting firms in 1991 and enacted the Certified Public Accountant Law in 1993. The number of accounting firms and certified public accountants has grown quickly since 1993. In 2000, China had 4,800 accounting firms and 135,000 CPAs (ADB, 2000). The development of accounting firms provided better-quality information for China's market. The need to rely on the Chinese government to generate information became less compelling.

6.1.2. Overseas Incorporation

Second, venture capitalists discovered ways to circumvent the Chinese laws against convertible preferred stock and stock options. A common practice of investing in private firms in China is to incorporate VC-backed private firms overseas irrespective of their true location of operation.³³ For firms like Stone Richsight that have been incorporated in China, venture capitalists normally require the firms to register a controlling shell company in an overseas tax haven such as the Cayman Islands. Venture

³³ For example, both Asiainfo and UT Starcom were incorporated in Delaware even though their operation centers and markets were in China.

capital investments are made to the shell company instead of to the real company in China.

By incorporating portfolio firms overseas, venture capitalists can take advantage of overseas laws and bypass China's restrictions. International venture capitalists frequently used deal-structuring techniques in the United States when investing in China in the late 1990s. (Kaplan and Stromberg, 2002). A survey of 13 international venture capitalists shows that 77% of respondents said they use convertible preferred and stock options frequently in deal structuring, 15% said they frequently make entrepreneurs' equity stake contingent on financial performances, and 47% of respondents said they sometimes use a state contingent clause (Zhang, 2001).

The practice of incorporating portfolio firms overseas also allows venture capitalists to determine the timing of IPOs in overseas stock markets. The requirement for Chinese firms to obtain approval from the Chinese government before being listed is a big obstacle for any VC-backed firms. Incorporating a shell company in an overseas tax haven can bypass the regulation because the shell company is an international company. Venture capitalists can take the shell company to an overseas stock market without having to beg the Chinese government for permission.³⁴ Two VC-backed private firms, Ta Fu International and Zindart, were successfully listed in Hong Kong in 1996 and on the NASDAQ in 1997, respectively, without the intervention of the Chinese government.

International venture capitalists noticed the merits of overseas incorporation and this practice gradually spread to the whole international venture capital community in China. The strategy of registering a shell company in overseas tax haven is not available

to VC-backed SOEs due to China's strict regulation of the transfer of state-owned assets. The Chinese government requires the approval of the central government for any SOE in China to register a shell company overseas, and the process of approval is a difficult process. This restriction makes it virtually impossible for SOEs to bypass the Chinese government to list in overseas stock markets.

6.1.3. The rise of NASDAQ

The third change is the high-tech boom in the NASDAQ. The tech-heavy NASDAQ took off in the mid-1990s. In only five years, it grew about sevenfold—from 755 in the early 1995 to higher than 5000 in March 2000. Enormous wealth was generated. Legends such as Netscape, Yahoo and Amazon.com were born.

NASDAQ played a critical role in venture capital development in China in the late 1990s. First, it encouraged numerous overseas returnees to come back to China to start their own firms. Many Chinese nationals worked in Silicon Valley in the 1990s and obtained first-hand experience of the information technology boom in the NASDAQ. Many of them believed that they could achieve enormous success in China by replicating business models in Silicon Valley. These overseas returnees were the favorite entrepreneurs of international venture capital due to their knowledge of both technology and western style management. Their return increased the supply of entrepreneurs to international venture capitalists.

Second, the NASDAQ bull market served as the best advertiser of venture capital in China. Few people in China knew about venture capital in the mid-1990s. This

³⁴ The Chinese government noticed the hole in regulations in the late 1990s and made some attempted to regulate the overseas listing of China-based firms. However these regulations are generally not very

situation changed quickly in the late 1990s. As NASDAQ continued to grow, the legends of Microsoft, Yahoo! and Cisco became widely known in China. The names of entrepreneurs such as Bill Gates and Jerry Yang became household words and their stories were eagerly read in China. From these stories, the Chinese learned about the critical role of venture capital in fostering these hugely successful enterprises, and they were eager to replicate the success of venture capital in China. venture capital suddenly appeared on the front-page of popular media and became a hot topic for policy makers and entrepreneurs. At least 47 SOE venture capital funds in China were founded in the late 1990s while only 4 SOE venture capital funds were founded before 1998 (Table 4.1). Domestic entrepreneurs saw Bill Gates and Jerry Yang as their role models and pursued venture capital aggressively.

International venture capitalists benefited the most from this surge of interest in venture capital because they were widely regarded as the prime choice of domestic entrepreneurs. China's entrepreneurs believed that international venture capitalists had the necessary management know-how and could help them list on the NASDAQ. In the late 1990s, international venture capitalists no longer had to take the initiative to convince domestic entrepreneurs to use venture capital financing.

Third, many venture capital firms in the United States such as Softbank had reaped enormous profits and reputation from investing in the United States. Like China's overseas returnees, they also saw China as the next frontier for information technology revolution and were willing to bet on China. Their call for fund-raising to invest in China was enthusiastically supported by institutional investors. Their arrival injected fresh blood to the community of international venture capital in China.

Finally, the NASDAQ provided a convenient IPO exit channel for VC-backed firms in China. By incorporating firms overseas, international venture capitalists could take VC-backed firms in China to the NASDAQ without the approval of the Chinese government. NASDAQ investors were highly enthusiastic about China in the late 1990s. In July 1999, China.com, a portal site established by Hong Kong Entrepreneurs, was listed on the NASDAQ. Its IPO price implies a valuation that was more than 400 times China.com's 1998 revenue and 65 times China.com's 1999 expected revenue. Even more remarkably, China.com was not one of the top five Internet sites in China. Another example was Asiainfo: its stock price soared more than 300% on the first day of trading on the NASDAQ on March 21, 2000. Its valuation was about 60 times Asiainfo's 1999 revenue.

Encouraged by the NASDAQ market, China's improved institutional environment, and improved deal structuring, venture capital investments in China reached a new high of \$858 million in 2000 (Figure 3.1). VC-backed private firms dominated the second wave of venture capital investments in China: more than 90% of the VC-backed firms were private firms. VC-backed SOEs in the late 1990s, such as Fujian Industrial Bank and China Netcom, were mainly in banking and telecommunication services—areas that private firms were not allowed to enter. Some international venture capital funds even made a policy of not investing in SOEs.

In the late 1990s, VC-backed private firms typically targeted China as their major markets. Even private firms founded by overseas entrepreneurs, such as Yong He King, used China as their major market in the late 1990s. Table 4.6 shows that the percentage of firms that had headquarters overseas decreased significantly after 1998: only 10% of VC-

backed firms had headquarters outside China after 1998, while about 40% of VC-backed private firms had headquarters outside China before 1998. The increasing emphasis on the Chinese market is consistent with the improved institutional environments and the reduced reliance on connections in China.

6.2. Fund-raising in China in the late 1990s

Accompanying the domination of VC-backed private firms was the decline of joint venture funds in China. Table 4.1 shows that, in the late 1990s, “no partner” international venture capital funds accounted for 86.69% of the total capital while joint venture funds accounted for 13.31% of the total capital. The average fund size of the “no partner” group (\$86.86 million) was much bigger than the average fund size of the joint venture group (\$60 million). In contrast, between 1991 and 1993, twelve out of the nineteen funds (63.12%) raised in the period were joint venture funds. The average fund size for the “no partner” group was \$38.13 million, much smaller than the \$63.07 million for joint venture funds.

The decreased dependence on domestic partners is not unique to venture capital funds. In the same period, the percentage of wholly foreign owned enterprises in total foreign direct investment in China was rising steadily in 1990s. Table 6.1 presents the change of foreign direct investment composition by the organization of foreign invested enterprises in China from 1991 to 2000. It shows that as China’s institutional environment improved, the portion of wholly-foreign-owned enterprises climbed steadily, while the portion of joint venture enterprises declined (Fu, 2000). What distinguishes venture capital investment from other forms of investment is that the organization of

venture capital funds is far more sensitive to changes of institutional environment. The “no partner” group accounted for 17.21% in the first period and 86.69% in the last period, a fivefold increase. In contrast, the percentage of wholly-owned foreign enterprise nearly doubled from the first period (23%) to the last period (39%).

(Insert Table 6.1)

The venture capital funds founded in the late 1990s in China were mainly raised by a new breed of international venture capitalists like Bo Feng. These new international venture capitalists typically enjoyed success investing in China’s high-tech private firms in the mid-1990s and were able to raise new venture capital funds from international institutional investors to invest in China. For example, Bo Feng helped Stone Richwin and Asiainfo get venture capital investments in the mid-1990s and built his reputation as one of the best venture capitalists in China. He founded Chengwei Ventures in 2000 and raised money from blue-chip institutional investors such as Yale Endowment.

In the late 1990s, international venture capitalists in general were more cautious in investing in China. Although venture capital investments and fund-raising reached new heights in the year 2000, in the late 1990s only 12 international venture capital funds were raised to invest in China—far below the 31 funds raised in the mid 1990s and the 20 funds raised in the early 1990s. One reason for the disparity is that many international venture capitalists, such as Walden International and H&Q Asia, chose to invest in China using regional funds like Greater China Funds instead of China funds to avoid excessive exposure to risk. Both Walden International and H&Q Asia had experienced investment failures in China and tremendous success in Taiwan. They felt that the Greater China

Fund³⁵ or the Asia-Pacific Fund³⁶ could give them more flexibility. This strategy seems to have paid off well. Amid the NASDAQ downturn and venture capital downturn in China, Walden International still had no trouble raising more than \$1 billion for its Asia-Pacific Fund.

6.3. Types of Industry of VC-Backed Firms

The industries of the VC-backed firms in China also experienced fundamental changes in the late 1990s. Table 3.4 shows that in the early 1990s, international venture capitalists generally focused on low-tech manufacturing. Industrial manufacturing and consumer products were the two most popular industries. They accounted for more than 78% of the total venture capital firms. That percentage declined to about 59% in the mid 1990s. In the last period, less than 4% of the VC-backed firms were in the consumer products or industrial manufacturing fields. In contrast, the percentage of high-tech firms jumped from 20% in the early 1990s to 90% in the late 1990s. By the end of the 1990s, Internet-related service firms alone accounted for more than 50% of the total VC-backed firms. The second most popular industry was computer software, about 21% of the total VC-backed firms.

The general trend of industry distribution is consistent with the prediction of agency theory: improvements in institutional environment should reduce the agency costs of venture capital investment and encourage investments in high agency cost projects such as high-tech firms. However, a careful analysis shows that improvements in institutional environment are unlikely to be the sole reason behind the shift from low-tech

³⁵ Funds that invest in China, Taiwan and Hong Kong.

³⁶ Funds that invest in the US, China Taiwan, Hong Kong and other Asia-Pacific countries and regions.

to high-tech industries, for two reasons. First, the percentage of high-tech firm seems to be too high compared with that in other countries. Although venture capital in the United States focuses on investing in high-tech enterprises (80%), venture capital in many other countries generally focuses on low-tech industries. For example, in European countries, high-tech industries only received a quarter of the total venture capital investment in 1998. The percentage in Japan was only 10%. The most popular industrial sectors in Europe were industrial machinery and equipment, fashion, and leisure products (OECD, 2000; OECD, 1995). Compared with European countries, China had a weaker research and development capacity, a poorer intellectual property right protection, and an inferior infrastructure for market economy. All these factors indicate that the distribution of VC-backed firm in China should be oriented more toward low-tech than that in European countries.

The lack of venture capital investments in low-tech firms cannot be explained by the lack of growth in low-tech private firms. Table 6.2 shows the industry distribution of the 100 fastest-growing private enterprises in China. The 100 firms were compiled through a joint survey conducted by the magazine *Contemporary Managers* and the Association of China Private Enterprises. The 100 firms were selected from 942 firms based on their growth records from 1999 to 2001, a period roughly equal to the last period researched in this paper. On average, these enterprises grew at 210% annually from 1999 to 2001. The average revenue for these private enterprises in 2001 was more than \$163 million. Table 6.2 shows that the 100 fastest-growing private enterprises were concentrated heavily in traditional manufacturing industries such as mechanical manufacturing, food, construction materials, apparel, and textiles. IT-related firms

accounted for only 10% of the firms in the list. More remarkably, no Internet service firm made the top 100 firm list, although firms in Internet service accounted for 50% of the VC-backed firms invested in between 1998 and 2001.

(Insert Table 6.2)

What can explain the lack of investment in low-tech private enterprises? The most important reason was probably the spectacular performance of NASDAQ. Due to the policy restrictions in China, international venture capital funds had to rely on overseas stock markets for exit, and the NASDAQ was the primary IPO channel. Investors in the NASDAQ gave high-tech firms in China, such as China.com and Asiainfo, incredibly high valuation. In contrast, China's listed low-tech firms received low valuation on the NASDAQ. For example, in 1999, Zindart was valued at only 3–6 times its 1998 earnings. Naturally, international venture capitalists wanted to focus on high-tech firms to take advantage of the high valuation.

A second reason for the focus on high-tech industry was the policies of the Chinese government. The Chinese government mainly sees the development of venture capital as a tool to promote China's science and technology. Many venture capital policies were written specifically to promote the development of science and technology in China. The government agency that is responsible for venture capital policy making is the Ministry of Science and Technology (MST), whose primary goal is to promote science and technology in China (White, Gao and Zhang, 2002).

Several important policies were made in the late 1990s to provide incentives for venture capital investments in high-tech industries. First, the Chinese government set up multiple funds to invest in high-tech firms. The Chinese government encouraged the

establishment of SOE venture capital firms in the late 1990s to invest in high-tech firms. More than 50 domestic venture capital firms were established by the Chinese governments and SOEs in the late 1990s. Almost all the domestic venture capital firms targeted investing in high-tech firms (White, Gao and Zhang, 2002). In addition, MST established a \$1.2 billion Innovation Fund for Small Technology-Based Firms in 1999 to help young high-tech firms get financing. These funds made it easier for entrepreneurs to get financing for high-tech start-ups. High-tech entrepreneurs understood that even if they were unable to obtain financing from international venture capital firms, they might still be able to obtain financing from government funds. The increased numbers of high-tech firms made it easy for international venture capitalists to find deals for high-tech firms.

Second, preferential tax treatments were granted to high-tech enterprises. In 1999, MST issued a regulation stipulating that technologically advanced enterprises certified by MST would be entitled to have an income tax rate of about 50% of the usual rate.³⁷ Many VC-backed high-tech enterprises, such as UT Starcom and Asiainfo, were accredited as technologically advanced enterprises, and they paid the favorable tax rate. In 2000, the State Council further decided to exempt software enterprises and IC (integrated circuit) firms from value-added tax.³⁸ The lower tax rates for high-tech enterprises encouraged entrepreneurs to start high-tech firms.

Third, the Chinese government planned to give high-tech firms preferential access to IPOs. China's Corporation Law, enacted in 1994, was hostile to IPOs for VC-backed firms because it forbade the negotiation of legal person shares. At the end of 1999, under lobbying by MST, the Chinese government amended the Corporation Law to facilitate

³⁷ "Notice about Tax Issues in Implementing State Council's 'Decision on Strengthening Technological Innovation, Developing High-tech and Realizing its Industrialization'," MST, November 2nd, 1999.

IPOs for high-tech firms.³⁹ The amendment stated that the State Council could establish a new stock market for listing high-tech enterprises, and the regulations of this stock market did not have to be consistent with the Corporation Law. The purpose of this amendment was to facilitate the establishment of a NASDAQ-like “second board” in China to make it easier for high-tech enterprises to have IPOs: Only firms that were accredited by the MST as “high-tech” firms were allowed to be listed on the proposed second board. Although the proposed second board and new regulations never materialized, the sense of expectation encouraged venture capitalists to invest in high-tech in China during the late 1990s and early 2000s.

A third reason for the lack of investments in low-tech firms was probably the lack of knowledge about venture capital among low-tech entrepreneurs. Research has shown that this lack of awareness is an important factor affecting the demand for venture capital. For example, in the UK, over 50% of small enterprises surveyed did not know that they could finance through venture capital investment (Freel, 1999). Most high-tech entrepreneurs in China are young and highly educated. The nature of their prior job experience enables them to have more connections with Silicon Valley, and hence they are more likely to be knowledgeable about venture capital opportunities. These entrepreneurs typically have venture capital in mind when they start their enterprises. Some entrepreneurs such as the founders of E-tang received venture capital funding before they started their firms. In contrast, many entrepreneurs in low-tech firms tend to be older and more established. For example, Gensheng Niu, the founder of Meng Niu, was 43 years old when he started the company. Many founders of low-tech firms start

³⁸ “Policy for encouraging the software industry and promoting the IC industry,” State Council, 2000

with their own funding and loans. They are generally less familiar with the operation of venture capital and pursue venture capital less aggressively.

The cultural differences between low-tech entrepreneurs and international venture capitalists are also likely to play a role in the focus on high-tech industry in China. International venture capitalists, such as Chang Sun and Bo Feng, are typically highly educated Chinese nationals. Most of them received their education in the United States. Their backgrounds are more similar to the backgrounds of high-tech entrepreneurs. The similar background makes it easier for them to communicate with venture capitalists and to meet their expectations.

6.4. The Stages of VC-Backed Firms

In the late 1990s, international venture capitalists were more interested in late-stage firms. Table 4.8 shows that 71.43% of venture capital funds claimed to be interested in early-stage firms in the late 1990s compared with 62.5% in the mid-1990s. The change in percentage of investments in early-stage firms should be much more dramatic. Even though many firms claimed to be interested in early-stage firms in the mid-1990s, they mainly invested in established firms. For example, ASIMCO stated that it was interested in early-stage firms. In reality, however, all ASIMCO's 18 investments in the sample were joint ventures with established SOEs. VC-backed private firms invested in during the later period, like Asiainfo and Stone Richsight, generally had an operations history and were profitable before receiving venture capital investments.

³⁹ "Decisions about Amending the People's Republic of China's Corporation Law," The Standing Committee of the People's Congress of China, December 25th, 1999.

In the late 1990s, venture capitalists were willing to take risks on unproven entrepreneurs and firms, and it is much easier to find early-stage firms in the sample. Stories appeared in the media of students procuring multi-million-dollar venture capital investment simply by writing a business proposal. For example, ChinaRen was founded by three Chinese students at Stanford. They received more than \$10 million in venture capital investment from blue chip financial houses, including Goldman Sachs, to start a geocities-like online community in China. The founders of E-tang, also an online community portal site, were several Chinese students who had just earned their MBAs from Harvard Business School. They won a \$40 million venture capital investment from Draper Fisher and Sycamore Partners by submitting a business proposal. Many other famous VC-backed firms, such as Eguo and Eachnet, had little or no operations history before receiving venture capital investments.

The dramatic increased interest in early-stage firm is consistent with the prediction of agency theory: Improvements in the institutional environment should reduce information asymmetry and agency costs and encourage investments in early-stage firms. However, these early-stage investments were typically made to Internet service firms in 1999 and the early 2000. The valuation of these firms was extremely high. And investments in early-stage firms decreased quickly after the NASDAQ downturn in 2000. These facts suggest that the interests in early-stage firms might have been mainly driven by the Internet mania on NASDAQ.

6.5. Percentage of Stake Held by Venture Capitalists

In the late 1990s, the percentage of stake held by international venture capitalists decreased dramatically. Table 6.3 demonstrates the results of a two-stage Heckit model for the percentage of stake held by venture capitalists and the log investment amount. A Heckit model is used to correct for possible selection bias in the data set. In the Heckit model, the first stage is a probit model on the probability of missing, and the second stage is an OLS. The probability of missing is assumed to be correlated with the dependent variable, and λ is added into the second stage model to control for the selection bias.

Table 6.3 shows that in the investment amount model, the coefficients for the first time period and the second time period are not significantly different from the time period of 1998 to 2001. In the model for stake held by venture capitalists, the coefficient for the time period 1994–1997 are positive (31.18) and significant at 10%. The coefficient for 1991–1993 is also positive (30.86) but insignificant (14%). The lower stake and the roughly equal investment amounts suggest that venture capitalists gave VC-backed firms higher valuation in the late 1990s.

(Insert Table 6.3)

The decrease in investment stake is consistent with the prediction of agency theory: Shleifer and Vishny (1997) predict that a large investment stake can be an alternative mechanism to protect external investors when investor protection is weak. As institutional environments improve, international venture capitalists should have less compelling reasons to use a large ownership stake to protect their interests and the percentage held by international venture capitalists should decrease. However, a strong competing theory to explain the simultaneous decrease in stake and increase in valuation

is the “money chasing deals” phenomenon in venture capital investments (Gompers and Lerner, 2000): sudden inflow of venture capital investments can boost firm valuations dramatically. The decrease of venture capital stakes might be driven by the performance of NASDAQ in the late 1990s, and China’s institutional environment may have had a relatively minor impact.

6.6. Investment performances

It is probably too early to know the performances of VC-backed firms invested in during the second wave of venture capital investments. The existing evidence provides a mixed picture. Some have claimed exceptional return on VC investment in China. For example, the CEO of IDG claimed that the IDGVC had an annualized return of 45% in China.⁴⁰ However, venture capitalists interviewed in late 2001 generally believed that a venture capital fund was considered lucky if its investment in China broke even. Many venture capitalists interviewed deplored the short China high-tech bubble in the NASDAQ: It lasted less than a year, from the time when China.com was listed, in mid 1999, to March 2000 when the NASDAQ reached all time high. Many VC-backed firms were valued based on the NASDAQ valuation in 1999, and many suffered heavy losses after 2000.

However, this situation could change soon. One important difference between VC-backed private firms and VC-backed SOEs is that VC-backed private firms are far more likely to deliver solid growth. Of the 12 listed VC-backed firms, seven firms have been able to deliver an annual sales growth of more than 30%. UT Starcom, Sina.com,

⁴⁰ “McGovern: China Provides the Highest Venture Capital Investment Return for IDGVC,” <http://www.china.org.cn/chinese/EC-c/388696.htm> and <http://it.sohu.com/11/16/article212051611.shtml>.

Sohu.com, and Netease.com are all multi-billion-dollar-valued enterprises on NASDAQ with solid growth and profit. This contrasts sharply with the performance of listed VC-backed SOEs (Table 5.1). The recent spectacular performances of these firms on NASDAQ and a rising NASDAQ has rekindled venture capitalists' hope. Some VC-backed firms in the sample are said to be preparing for listing on the NASDAQ. Ctrip was successfully listed on NASDAQ in December 2003, and its price soared in the first day of trading. These IPO candidates' successful listing could change the overall venture capital investment returns of the late 1990s.

Venture capitalists interviewed generally believe that the overall investments in private firms would have been dramatically different had VC-backed firms been able to be listed on China's domestic stock markets. Currently, only 7.5% of VC-backed private firms in the sample went to IPOs, much lower than the 30% in the United States (Gompers and Lerner, 1999). Being able to list VC-backed firms on domestic stock exchanges should increase VC-backed firms' chance of being listed. It would also boost the valuation of VC-backed firms. One frequently cited example about the difference in valuation is the comparison of Ufsoft and Kingdee (Table 6.4). Ufsoft and Kingdee are the No.1 and No.2 producers in China's enterprise software market. Both firms issued IPOs in 2001: Kingdee was listed on Hong Kong's Growth Enterprise Market and Ufsoft was listed on the Shanghai Stock Exchange. Table 6.4 shows that Ufsoft's valuation is almost five times of Kingdee's valuation although Kingdee's total sales amount is about 60% of Ufsoft's. Many industry insiders believe that Kingdee's valuation would have been at least double had Kingdee been listed on the Shanghai Stock Exchange. Unfortunately, listing on Shanghai was not an option for Kingdee because Kingdee is a

VC-backed firm. Listing on an overseas stock exchange is the only way for its venture capitalists to exit from their investments.

(Insert Table 6.4)

Table 6.1: The Organization of Enterprises with Foreign Investments in China, 1991--2000

This table presents the composition of foreign direct investment in China by the organization of foreign-invested enterprises. Data from 1991 to 1998 came from China Economic Yearbook. Data on 1999 and 2000 came from the website of China's Ministry of Foreign Trade and Economic Cooperation.

Year	Total FDI in China (\$ Billion)	% of Investment by Joint Venture Enterprises	% of Investment by Contractual Joint Ventures	% of Investment by Wholly Foreign Owned Enterprises
1991	4.37	49.30%	16.40%	24.30%
1992	11.01	54.20%	18.80%	22.30%
1993	27.52	55.30%	18.90%	23.40%
1994	33.77	52.80%	21.00%	23.70%
1995	37.52	50.50%	19.90%	27.30%
1996	41.73	49.30%	19.20%	29.90%
1997	45.26	37.20%	17.00%	30.90%
1998	45.46	38.60%	20.40%	34.60%
1999	40.31	39.20%	20.42%	38.55%
2000	40.72	35.82%	15.96%	47.00%
1991--1993	42.9	54.41%	18.62%	23.21%
1994--1997	158.28	46.87%	19.12%	28.25%
1998--2000	126.49	37.90%	18.98%	39.85%

Table 6.2: 2002 Top 100 Growing Enterprises in China
 This table presents the distribution of industry for the "2002 100 fast growing private enterprises in China." Data in this table were compiled by *Contemporary Manager* magazine and the Association of China Private Enterprises.

Industry	Percentage
Conglomerates	12%
Mechanical Manufacturing	11%
Construction Materials	11%
Computer and Electronic Equipments	8%
Food	7%
Textile	6%
Apparel	6%
Consumer Electronics	5%
Agriculture/fisheries	5%
Real Estate	4%
Plastic Manufacturing	4%
Retail/Wholesale	4%
Medical/Biotechnology	3%
Telecommunication	1%
Computer Services	1%
Other Industries	12%
Total	100%

Table 6.3: A Heckit Estimation of Venture Capital Investment and Stake Held by Venture Capital Firms
This table presents Heckit estimates of regression on venture capital investment amount and stake held by venture capital based on the 266 venture capital investments collected by the author. The two models assume that the probability of missing value in dependent variable is correlated with the true value of dependent variable. A probit model is used to model the probability of missing and an OLS is used in the second stage analysis. This table presents the second part of the Heckman Model.

		Model 1		Model 2	
Number of observations:		156		125	
Dependent Variable:		Log Investment Amount		Percentage Stake*100	
Independent Variable:		Coefficient Estimate	Pr > t	Coefficient Estimate	Pr > t
Intercept		3.49 (1.68)	0.03	1.32 (28.89)	0.96
Location	Guangdong	-0.03 (0.42)	0.94	-4.76 (6.25)	0.34
	Overseas	0.58 (0.40)	0.15	-14.74 (9.10)	0.11
	Shanghai	0.54 (0.31)	0.08	-4.09 (8.56)	0.63
	Other Provinces	-0.03 (0.30)	0.92	-9.75 (7.44)	0.19
Period	Beijing				
	1991-1993	-1.14* (0.60)	0.06	30.86 (20.65)	0.14
	1994-1997	-0.45 (0.52)	0.38	31.18* (18.90)	0.10
	1998-2001				
Industry	Consumer Products	-0.84 (0.67)	0.21	2.23 (10.51)	0.83
	Industrial Manufacturing	-0.60 (0.75)	0.42	11.10 (10.04)	0.27
	Other Industries	-0.64 (0.49)	0.19	-0.48 (10.01)	0.96
	Information Technology	-	-	-	-
Whether the VC-backed firm is a private firm		-1.08** (0.45)	0.02	-10.08 (8.08)	0.21
Whether invested in by Joint Venture Funds		-0.63** (0.32)	0.05	-4.76 (6.25)	0.67
Whether the investment is not the first-round investment		0.82 (0.98)	0.40	4.59 (14.39)	0.75
Whether the investment is invested in by IDG Venture Capital		-0.25 (0.56)	0.66	-5.76 (13.85)	0.67
λ		-0.47 (1.92)	0.90	27.76 (21.28)	0.19
ρ		-0.43		1.20	
σ		1.09		23.13	
Wald chi-sq Value			126.36		129.41
Pr > chi-sq			0.000		0.000
R-Square			0.3013		0.2804

*: Significant at 10%, **: Significant at 5%

Table 6.4: A Comparison of Ufsoft and Kingdee

This table compares the financial performances and valuation of Ufsoft and Kingdee. Both firms issued IPOs in 2001: Ufsoft was listed in Shanghai while Kingdee was listed on Hong Kong's Growth Enterprise Market (GEM)

Panel A: Revenues and Growth of Ufsoft

	Revenue and Profit (\$ Mil)					Growth Rate %					
	1998	1999	2000	2001	2002	1999	2000	2001	2002	1998--2002	2000--2002
Revenue	15.51	22.31	25.65	40.18	58.82	43.81	14.98	56.65	46.40	279.23	129.33
Earning before Tax	5.65	5.23	5.65	9.56	12.46	-7.48	8.08	69.34	30.31	120.67	120.67
Net Profit	2.64	4.22	4.82	8.48	11.04	60.00	14.19	75.81	30.12	317.99	128.77

Market Capitalization (Sep 2003): \$551 M

Panel B: Revenues and Growth of Kingdee

	Revenue and Profit (\$ Mil)					Growth Rate %					
	1998	1999	2000	2001	2002	1999	2000	2001	2002	1998--2002	2000--2002
Revenue	7.78	14.86	19.86	24.06	38.37	90.89	33.67	21.18	59.46	393.03	93.23
Earning before Tax	0.79	1.56	2.75	3.64	5.15	96.51	76.20	32.56	41.49	549.40	87.56
Net Profit	0.70	1.46	2.69	3.62	4.90	107.82	84.14	34.31	35.50	596.41	81.98

Market Capitalization (Sep 2003): \$ 118 M

CHAPTER 7: SUMMARY AND CONCLUSIONS

7.1. Summary of Findings

7.1.1. Government Policies and Venture Capital in China

This thesis describes the history of venture capital investments in China and discusses the major factors that influence venture capital in China. It finds that the Chinese government plays an important role in shaping every aspect of venture capital investments in China. First, venture capital investments in China have been largely conducted by international venture capital funds. This unique feature is mainly due to China's regulations against fund-raising in China. As a remnant of the planned economy, China does not allow private individuals or private corporations to raise money from private individuals. In addition, the limited partnership is not a legal organizational form for a venture capital fund. Consequently, venture capitalists who want to invest venture capital in China have to raise money from institutional investors overseas. Their venture capital funds have to be incorporated overseas and the operation of the funds must be conducted offshore. International venture capital funds brought the concept of venture capital investments to China and dominated China's venture capital investment market in the mid and early 1990s.

The rest of the venture capital funds in China have been largely SOE venture capital funds. These funds mostly rely on government appropriation as their funding source. The Chinese government invested more than \$1.6 billion in these funds in the late 1990s, trying to replicate the success of venture capital investments in the United States. However, despite heavy investment by the Chinese government, international venture

capital funds still dominated China's venture capital investment market in the late 1990s. All 18 IPOs of VC-backed investments in the data collected for this research were international VC-invested funds. None of them received money from China's SOE venture capital funds.

Entrepreneurs generally prefer investments from international venture capital funds to investments from SOE funds mainly because they believe that international venture capital funds can provide better services. The personnel of SOE funds are usually political appointees who are poorly trained for venture capital investments. Conversation with SOE venture capitalists shows that some SOE venture capitalists do not even know about the basic venture capital financial instruments, such as convertible preferred stock. In addition, the compensation scheme in SOE funds is rigid, and managers have insufficient incentive to pursue superior returns. Only firms that are desperate for funds turn to SOE venture capital funds for help. The returns for the \$1.6 billion invested by the Chinese government are likely to be extremely low.

Second, the organization of international VC funds in China has been heavily influenced by China's market-oriented reforms. In the early 1990s, the judicial systems and market intermediate institutions were weak. International venture capitalists frequently used joint venture funds with SOEs to reduce transaction costs in China. Joint venture funds economize on transaction costs by providing embedded interests for SOE partners to work for the success of the funds and encouraging SOE partners to conduct relation-specific investments. The disadvantage of joint venture funds is that SOE partners may not be profit maximizers and governance structure is damaged as a result. This research finds that, as China's rule of law and market intermediate institutions

improved, the need to form joint venture funds became less compelling and joint venture funds were less likely to be formed by the end of the 1990s.

Third, venture capital deal-structuring is heavily hampered by China's laws and regulations. China's laws and regulations forbid the separation of ownership and control. And China's laws do not have provisions for financial instruments such as convertible preferred stock and stock options that are widely used in venture capital investments in the United States. These cumbersome regulations leave venture capitalists only two choices: Either they do not use these financial instruments or they incorporate their investments overseas to evade Chinese regulations. The latter strategy is widely used in investments in private firms. Because the Chinese government has strict regulations against overseas incorporation for SOEs, venture capitalists usually cannot use financial instruments such as convertible preferred securities and stock options if they invest in SOEs.

Fourth, the Chinese government's policies have heavily influenced international venture capitalists' choices between SOEs and private firms. In the early 1990s, the Chinese government gave SOEs preferential access to many resources including financing, human resources, raw materials, and sales channels. This favorable treatment provided strong incentives for international venture capitalists to invest in SOEs. In contrast, the property rights of private firms were insecure in the early 1990s and private firms were heavily discriminated against by the Chinese government in resource allocation. These discriminatory policies toward private firms deterred international venture capitalists from investing in private firms even though private entrepreneurs are more motivated to pursue growth. The deepening of market-oriented reforms in the 1990s

reduced the privileges of SOEs and strengthened the property rights of private firms. These changes made international venture capitalists increasingly interested in private firms.

Fifth, the Chinese government's regulations have forced international venture capitalists to primarily rely on stock markets overseas for IPOs. All VC-backed IPOs made after 1998 were listed on overseas stock exchanges. Currently China has two domestic stock markets, Shanghai Stock Exchange and Shenzhen Stock Exchange. Both exchanges have experienced tremendous growth in the past decade. Unfortunately these two stock markets are not viable exit channels for VC-backed firms due to a variety of obstacles.

The first obstacle was the quota system. Each year a quota for a certain number of listings was set by the Chinese government and these quotas were distributed to various government agencies. Firms that wanted to list in China's stock markets had to first receive a recommendation from a Chinese government agency as part of the agency's quota. This quota system made it virtually impossible for private firms and joint venture firms to list in China's stock markets. Fortunately, this system was abolished in 2000. Now the Chinese government is allowing the market to have more power to decide which firms can be listed.

The second obstacle is the "legal person share" stipulation. Investments by venture capital firms are generally ruled to be non-negotiable "legal person shares." This rule makes it virtually impossible for venture capitalists to exit from their investments if they list their VC-backed firms in China.

The third obstacle is that the Chinese government has not formally allowed foreign-invested enterprises to be listed on China's stock markets. This restriction has tremendous influence on venture capital investments in China because international venture capital funds are the leaders in China's venture capital market. There have been persistent calls to allow foreign-invested firms to be listed on China's domestic stock exchanges. However, no change in the rules has yet been made.

In fact, the Chinese government also requires that any firms seeking overseas listing must obtain the approval of the Chinese government first. Currently, international venture capitalists bypass this requirement by incorporating VC-backed firms overseas and issuing IPOs for the overseas-incorporated firms. Although the Chinese government has taken a tolerant attitude to this strategy, there is no guarantee that the government won't take action against the strategy in the future.

7.1.2. An Information-Agency Perspective

The second finding of this thesis is that the information-agency approach has limited success in explaining venture capital investments in China. The information-agency perspective generally understands the mechanisms of venture capital as efforts to reduce agency costs and information asymmetry. However, the reduction of agency costs and information asymmetry does not seem to be the focus of venture capital in China. International venture capitalists in China frequently pursue investment strategies that damage venture capital governance structure. For example, international venture capitalists formed joint venture funds with SOEs and focused on investing in SOEs in the

early 1990s. Reducing transactional costs and attaining favors from the Chinese government seem to be the major concern for venture capitalists in China.

The information-agency approach predicts that as China's institutional environment improves, venture capitalists should be more likely to conduct venture capital investments in high-agency-costs projects such as high-tech or early-stage firms, and the percentage of equity held by venture capital investors should decrease. Although the empirical findings are consistent with the predictions in general, the evidence presented in this paper tends to support the view that the Chinese government's IPO policies play a more critical role in these changes.

In contrast, the information-agency approach has more success in explaining venture capital in developed countries. The difference in explanatory power may be due to the fact that in developing countries government policies tend to be more intrusive and property rights tend to be weak. The limited success of the information-agency approach suggests that a careful analysis of government policies and property rights is critical to understand venture capital in developing countries.

7.2. Policy Implications

Policy makers who aspire to develop conditions conducive to venture capital in China need to increase the supply of and demand for venture capital. Several reforms could be made to increase the supply of venture capital. First, the Chinese government should gradually allow fund-raising in China. Forbidding fund-raising in China prevents venture capitalists from raising money from the investors who are the most familiar with China. Venture capitalists have to raise money from international institutional investors

who are less familiar with China and are less likely to invest there. Allowing venture capitalists to raise money within China should increase the potential supply of venture capital dramatically.

Currently, China does not allow fund-raising in China primarily because of concern about financial frauds. This concern is legitimate, but it is not an unsolvable issue. Many developed countries also face a similar issue in financial regulation. The solution in the United States is to have strict regulation for fund-raising that targets the general public while fund-raising among “qualified investors” is relatively unregulated. Qualified investors include rich individuals and institutional investors (Halloran et al., 2001, Jackson, 1999). The idea is that qualified investors should have sufficient resources and expertise to handle complicated financial transactions and to protect their interests. Only fund-raising that targets small investors needs to be regulated strictly. China could essentially copy the U.S. regulation to allow fund-raising among “qualified investors” and to limit fund-raising from the general public. This should address the concern about financial fraud without sacrificing fund-raising in China.

China should have enough “qualified investors” to allow venture capitalists great space to raise funds. It is true that China does not have a strong group of institutional investors like the United States. However, years of economic reforms have successfully generated a large number of rich individuals who are eager to invest. Research has shown that approximately \$90 billion has been raised from China’s individuals to invest in China’s stock markets (Xia, 2001). Venture capital should be an attractive investment channel for these rich individuals if fund-raising is formally allowed in China.

China's Corporation Law also needs to be amended to allow limited partnership as a form of venture capital fund in China. China's Corporation Law only allows incorporation as limited liability corporation and stipulates that no corporation can invest more than 50% of its capital in other firms. These clauses are clearly incompatible with the needs of venture capital investments in China and amendments should be made.

A second reform for increase the supply of venture capital would be to facilitate venture capital deal-structuring in China. The lack of provision for convertible preferred securities and stock options forces international venture capitalists to incorporate VC-backed firms overseas. This strategy has its own risks: The enforceability of overseas court rulings is problematic in China. Entrepreneurs could resist unfavorable rulings by arguing in China's courts that the contract is inconsistent with China's laws. Without the cooperation of the Chinese courts, the rulings of overseas courts may not be enforced since most VC-backed private firms have most of their assets in China. Should international venture capitalists be able to use these techniques in China, the risk of unenforceable contracts should decrease, and venture capitalists should be more willing to invest in China.

Third, China should open its domestic stock exchanges to VC-backed firms. Currently, the restrictions on listing on domestic stock exchanges are likely to be the most binding constraint of venture capital development in China. The lack of institutional investors in China does not seem to be a burning issue for venture capital developments in China because international institutional investors are enthusiastic about investing in China. Given the right venture capitalists and the right China stories, international institutional investors are ready to open their pockets to pour money into China. The

investors in VC funds in China include an impressive list of such blue-chip endowments as the Yale and Stanford endowments. Even after most venture capital investments in the early and mid-1990s proved to be total failures, international institutional investors still did not shy away from investing in China. The “money chasing deals” at the end of the 1990s in China shows that there is enough venture capital money in China to cause some bubbles. Overseas incorporation currently bypasses the lack of provision for deal-structuring techniques. Although international venture capitalists have expressed concern about the enforceability of contracts in China, no real case of this has happened yet. The traumatic leadership changes in some VC-backed firms like 8848.com after the NASDAQ downturn look smooth: Venture capitalists successfully replaced many founders without causing big problems.

The IPO channel is repeatedly brought up by venture capitalists in various interviews as the most burning issue for venture capital development in China. Not being able to list on China’s domestic stock exchanges prevents VC-backed firms from obtaining the best valuation. Recent research on financial economics has shown that investors have strong local preferences because they are likely to have more information about the performance of local firms (Coval and Moskowitz, 1999). As a consequence, they are more likely to give high valuation to local firms than non-local investors. Many venture capitalists are confident that the venture capital investments should increase several-fold if China allows VC-backed firms to list in China’s stock exchanges.

To allow VC-backed firms to have IPOs in China’s stock exchanges, the Chinese government needs to repeal the arcane “legal person share” clause. This clause was made a decade ago as a political compromise between conservatives and reforms and it has

outlived its usefulness. Forbidding transfer of stock ownership currently prevents venture capitalists from closing the venture capital cycle. The Chinese government also needs to allow foreign-invested firms to list on China's stock markets because most quality VC-backed firms are currently invested in by international venture capital investors.

On the demand side, the Chinese government needs to make more reforms to secure private property rights, strengthen the rule of law, and improve intermediate market institutions. Research by the IFC shows that private entrepreneurs are still facing tremendous difficulties in attaining governmental help for entrepreneurship (IFC, 2000). Further reforms are needed to increase the supply of entrepreneurship in China.

The Chinese government also needs to take measures to ensure that venture capital investments are allocated to the areas that are the most productive. China's current heavy investment in high-tech enterprises may or may not be the most productive use of venture capital in the country. The heavy reliance on overseas stock exchanges forces venture capitalists to cater to the taste of investors on overseas stock exchanges rather than the economic fundamentals in China. Few fast growing low-tech private firms receive venture capital investments in China, although more than 40% of private firms claim that financing is a major issue.⁴¹ The distribution of venture capital investment might be closer to China's economic fundamentals if the Chinese government would allow VC-backed firms to be listed in China.

The Chinese government's industrial policies also play an important role in the concentration of investment in high-tech industries. The Chinese government mainly sees venture capital as a tool to improve science and technology. It has made many policies favoring high-tech industry including tax exemptions and possible favorable IPO policies

to stimulate the growth of venture capital. The Ministry of Science and Technology has become the leading regulatory agency of venture capital in China.

Although the Ministry of Science and Technology has done a respectable job of popularizing venture capital in China, it is incorrect to think that “venture capital equals high-tech.” Most venture capital investments in Europe and Japan have gone to low-tech industries. In the future, it seems more appropriate to regulate venture capital from the perspective of investor protection. The Chinese government should allow the market to have more freedom in deciding to what industries venture capital investment should go.

Overall, China’s experience shows that venture capital investment can work in developing countries, especially large developing countries. The Chinese government plays a critical role in shaping venture capital in China. Healthy venture capital development in the future hinges on further reforms by the Chinese government.

⁴¹ P.48, IFC, 2000.

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